OCTOBER 1926 ~ № 249

Monthly

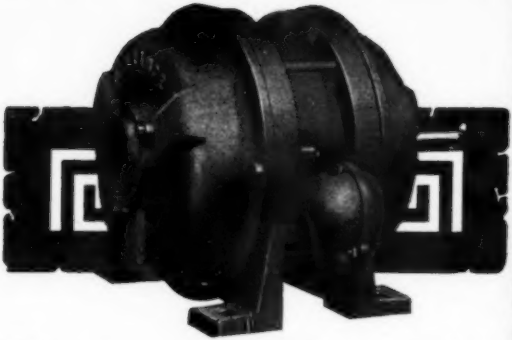
A Reference for Buyers

HITCHCOCK'S MACHINE TOOL BLUE BOOK

25,000
Controlled Circulation

Published By
HITCHCOCK PUBLISHING CO.
508 So. DEARBORN ST.
CHICAGO

FOR INDEXES SEE LAST PAGES



The rotor of a Reliance Induction Motor having ball or roller bearings cannot drop as the result of bearing wear.

This is valuable insurance against damaged stator windings.

Bulletin 4000 gives the details

Reliance Electric & Engineering Co.
1050 Ivanhoe Road, Cleveland, Ohio

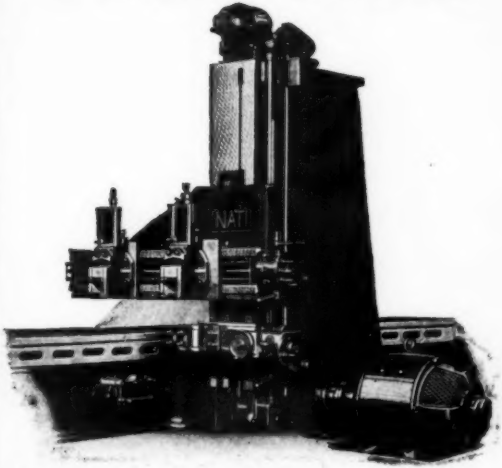
Branches:

Boston **New York** **Philadelphia** **Pittsburgh**
Cincinnati **Detroit** **Chicago** **Birmingham, Ala.**

We specialize in motors, sizes 1/2 to 250 h. p. constant and adjustable speed D. C.; squirrel cage and slip ring A. C.

RELIANCE A·C D·C MOTORS

CINCINNATI HYPRO OPEN SIDE



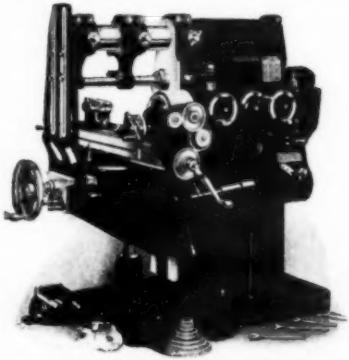
High Production Features:

Selective Dial Feed
Rail Clamping Device
Instantaneous Rail Lift
Rapid Power Traverse
Forced Lubrication
Combination Steel
Herringbone and Spur Gear Drive
Long Inverted Dovetail Down-Slide

The Cincinnati Planer Co.

Cincinnati, Ohio

LeBLOND
Heavy Duty Geared Milling Machines



LeBlond Heavy Duty Single Pulley Drive Geared Milling Machines are simple, rugged, accurate machines best suited for the work of average shops. They are particularly adapted to tool room work and the work of jobbing or repair shops.

The one piece column, the box type knee, the exceptionally large overarm, and the self aligning arbor supports are a few of the distinctive features of these machines.

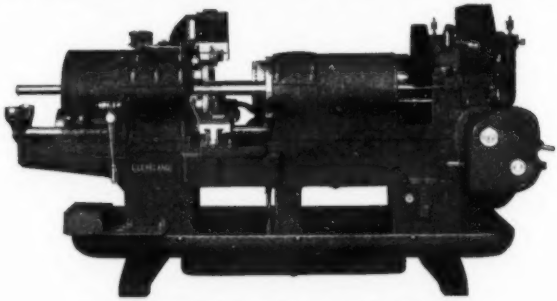
They are built in a complete line of sizes, in both plain and universal styles, and can be furnished with motor drive. Our catalogue, which gives complete description, will be sent to interested parties.

THE R. K. LeBLOND MACHINE TOOL COMPANY

CINCINNATI, OHIO

MORE PRODUCTION!

FASTER
SET-UP



GREATER
SIMPLICITY

4-SPINDLE "CLEVELAND"

CLEVELAND AUTOMATICS

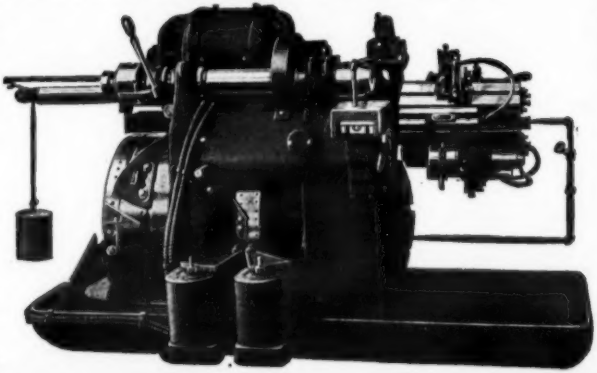
THE CLEVELAND AUTOMATIC MACHINE CO.
CLEVELAND, OHIO

A Simple, Inexpensive Automatic

The Gridley Single Spindle Automatic Screw Machine offers you a real means of cutting costs on heavy bar stock parts or short runs of smaller parts. This machine is built in 5 sizes—2¼", 3¼", 4¼", 5" and 5¼" capacities.

Send your blueprints or samples and let our engineers prove to you this saving by guaranteed production figures.

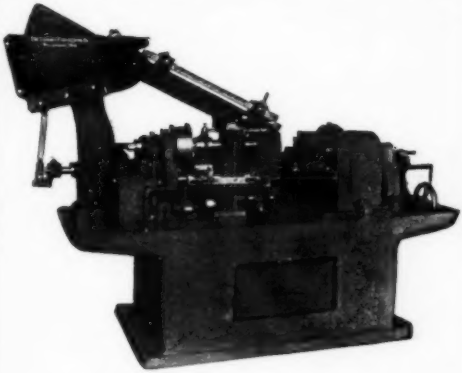
Ask for a free copy of the Gridley Single Spindle Bulletin for complete details.



The National Acme Co.

700 East 131st St.,

CLEVELAND, OHIO



"This is Production"

2800 Pointed and Threaded ½" Bolts Per Hour— One Operator!

WHEN USING

Four Economy Automatic Combined Pointing and Threading Machines.

Capacity ¼"x1" to ¾"x5½" Bolt and Cap Screws.

The Economy Engineering Company

WILLOUGHBY, OHIO

The "Hole" Question And Sharp Drills

Motor Driven

Capacity No. 52 to 3/4" Drills

Style A-7-T Grand Rapids Drill Grinder

The Drill Grinder illustrated above is of the bench type, but can be furnished with floor column. It may be operated from a lighting circuit.

Like all Grand Rapids Drill Grinders, it is scientifically designed to both ***sharpen*** and ***shape*** the cutting edges in a way that insures the cutting capacity of which the drills are capable.

Given any particular drilling outfit, and if the drills are sharpened on a Grand Rapids Drill Grinder they can be counted on to do their part in producing the maximum amount of accurate work.

Write for the Drill Grinder Book

It tells the "how" and "why" of it

Gallmeyer & Livingston Co.

342 Straight Ave., S. W., Grand Rapids, Mich.

Manufacturers of Grand Rapids Drill Grinders, Cutter and Tool Grinders and Tap Grinders. What do you need?

Cutter and Tool Grinders

For All Classes of Work

No. 12
Cutter and Tool
Grinder

The Nos. 10, 11 and 12 give a range of sizes that will take care of any kind of cutter and tool work as well as light cylindrical grinding.

Let us recommend the proper sizes for your work

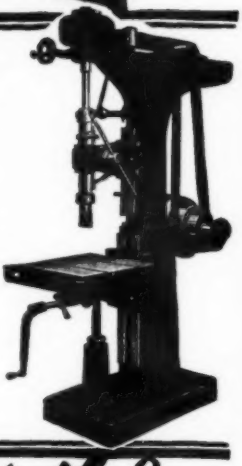
LANDIS TOOL COMPANY

Waynesboro, Pa.

New York Office: 30 Church Street Detroit Office: 5928 Second Blvd.
Chicago Office: 618 W. Washington Blvd.

profit 5 ways

accuracy
speed



Each of the 20 types and sizes of **Avey Sensitive Drilling Machines** represents the absolute minimum drilling cost over many years. Each will give you "lowest cost per hole" because it has

1. Greater accuracy.
2. Higher capacity.
3. Lower drill cost, with maximum efficiency of high-speed drills.
4. Wider range of work.
5. Lower upkeep and operating cost with longer life.

Put your drilling problems up to us. May we give you the facts?

Ask for bulletin

The Avey Drilling Machine Co.

Cincinnati, Ohio

Representatives in principal cities

Avey for economical drilling

FOOTBURT

A Single Spindle Footburt Sipp Sensitive Drill

Made in three sizes of single and multiple spindle models

More holes with this machine

Why? Because you can change speeds in two seconds or belts in ten seconds—because the automatic idlers keep the belt pulling to capacity at all times—because the full ball bearing equipment and accurate machining gives a smooth, fast cut.

Write for No. 650 Folders

The Foote-Burt Company, Cleveland, O.

FOOTBURT

Don't Forget—

Wood, Fibre, Rubber, Paper, Mica, Bakerlite

as well as the ordinary metals can be drilled to advantage on the

Leland-Gifford Super-High-Speed Ball Bearing Drilling Machine

Spindle Speeds Up to 10,000 R. P. M.

Write us about this Drill to speed up your drilling operations.

Ask for Bulletin No. 502

Leland-Gifford Co.

Worcester, Mass., U. S. A.

BRANCH OFFICES:

Boston Chicago New York
Cleveland Detroit Rochester

Spring Press

(UNIFORM BLOW)

Foot or Power

Single and Double Action

These new dependable Presses are used in large numbers by manufacturers of—

Electric Devices, Toys,
Jewelry, Clocks, Cutlery,
Hardware, Radio Sets,
Instruments, Etc.

The Uniform Blow is a very special feature—it increases production and eliminates costly inspection. Investigate.

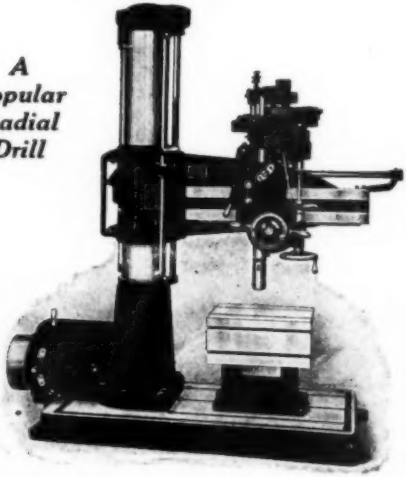
The Taylor & Fenn Co.

Hartford, Connecticut, U. S. A.

The Cisco-Mueller Radial

A Tool of All-Around Efficiency With Distinctive Features

A Popular Radial Drill



We recently bought outright the Mueller Machine Tool Co., and are continuing the manufacture of their popular radial drill as the "Cisco-Mueller." Some of its features are:—patented stationary column; combination positive and friction feed; simple control; unusual rigidity; combination low and high speed reverse; simple and powerful gear box, making instant speed changes without shock or noise.

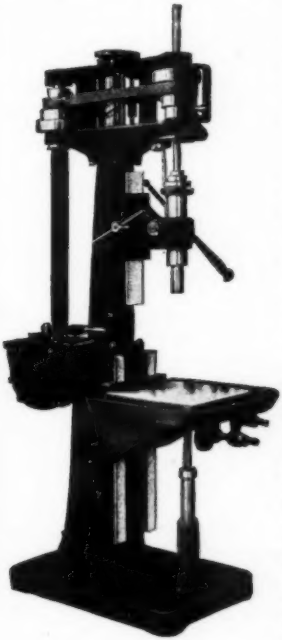
Your drilling problem is ours; will you write?

The Cisco Machine Tool Co.

1700 Elmore Street, Cincinnati, Ohio

You Can Rely on Every Fosdick to

Keep Production Up—Costs Down



Uprights

21" to 30", cap. 3/16" to 3".

Ball Bearing Sensitive

13" to 24", 1 to 6 spindle, capacity to 1⅛".

Radials

All Geared, high speed to heavy duty, 2 to 6 ft., cap. 3/16" to 4" drills.

Balanced Arm, motor driven, 4 to 6 ft.

High Speed Sensitive, 3, 3½ and 4 ft., for drilling and tapping, capacity to 1".

Pictured

to the left is our 16" High Speed Sensitive. It's an ahead-of-date machine in which we take a great deal of pride, and as an owner you would take a great deal of satisfaction.

In design all our line is well in advance of general practice, and meets the modern demand for speed, accuracy and lasting dependability.

You are sure to find something of interest in our illustrated Catalog—write for a copy today

The Fosdick Machine Tool Co.

1638 Blue Rock St., Cincinnati, Ohio

One Man Handles All Dies

Type BB

With this up-to-date and exceptionally convenient

1-Man—4-Post

Screw Press

easily delivering 80-Tons Pressure

Your tool maker ***requires no help*** in handling any dies. Machine is sensitive, rigid, powerful. Perfect alignment of punch and die is assured. Abundant room between bed and ram. We also make three smaller sizes. Table of Type BB is 20"x36".

A Surface Grinder

that's a revelation in quiet efficiency. Its rigidity insures accuracy. Has non-vibrating wheel. Both feeds have graduated dial.

Let us send folders and prices

JARECKI MACHINE AND TOOL CO.

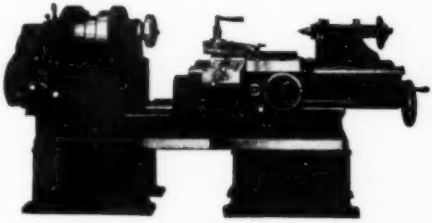
Department A

GRAND RAPIDS, MICHIGAN

Rahn-Larmon 18"/36"

Extension Bed Gap Lathe

Also Made in Sizes 22"/40" and 28"/50"



The Ideal Lathe for Railroad and Jobbing Shops

Here is a lathe of the widest range, yet so sturdy in construction that it absorbs the vibrations of the heaviest cuts.

There is hardly a reasonable limit to the work it will do. It is always ready for practically any job, without tearing down or setting up.

It saves in investment cost, it saves in time and labor cost, and it increases output—a most unusual combination. And it enables the operator to have at all times a lathe ready for 'most any job that comes into the shop.

Get in touch with us. Find out what this lathe will do for you and how it saves costs. Glad to go into the matter with you fully, without obligating you in any way.

The Rahn-Larmon Co.
CINCINNATI, OHIO

For Sawing Solid Bars, Beams, Channels, Angles, Tees, Etc. For Accurate Die Work, Tool Room Work, and All Kinds of Shop Sawing, Use the MARVEL METAL BAND SAW No. 8

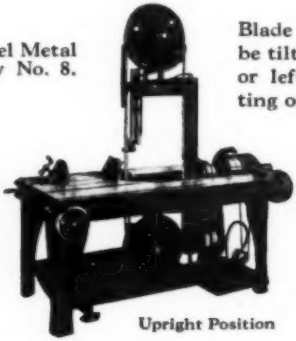
It cuts off square and true, and will also cut on an angle right or left without swinging the bar around the shop.

CAPACITY up to and including 18 INCHES

Write us today. Put one of these machines to work in your shop.

The Marvel Metal Band Saw No. 8.

Blade frame can be tilted to right or left for cutting on an angle.



Upright Position

Write today for special circular—
And list of satisfied users

ARMSTRONG-BLUM MFG. CO.
341 N. Francisco Ave., CHICAGO, ILL.

7" Horizontal Shaper
3½" Vertical Slotter

Combined in One Machine

The Rhodes Combined Shaper and Slotter

Nothing better than this two-purpose machine for keyseating, shaping, slotting, die making, etc., etc. A few turns of a wrench changes it from shaping to slotting and vice versa, and both may be done with one set-up of the work. Thoroughly accurate, and more readily manipulated than are the larger machines within its capacity.

Ask your dealer or write for
CATALOG H22

The Rhodes Mfg. Company

944 Park Road, -:- Hartford, Conn.

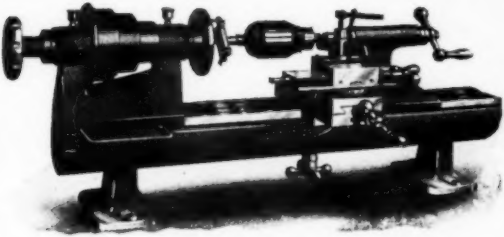
SHAPERS — RHODES — SLOTTERS

They are usually known among mechanics as lathe mandrels, but they work equally as well on millers or grinders. They also will take a job with a square hole as well as a round one.

Write us for further information.

W. H. Nicholson & Co., 117 Oregon St., Wilkes-Barre, Pa.

SLOAN and CHACE **Precision Tools**



No. 6 Precision Bench Lathe

THIS MODERN MACHINE combines the accuracy of adjustment of the precision bench lathe with the strength and rigidity of a production tool. There's nothing better for the tool room or for various types of light manufacturing.

Large castings and an extra wide bed provide great strength and unusually large bearing surfaces. The headstock bearings are tool steel of the two-taper type, with an additional ball thrust bearing on the outer end to prevent excessive wear. Furnished for either countershaft or motor drive.

Collet Capacity	⅞"
Capacity with draw-in spindle removed	1¼"
Length of Bed	38"
Distance between Centers	18"
Swing	10"
Width of Lathe over all	14½"
Weight of Lathe	175 lbs.

Tell us of your needs, and we shall consider it a pleasure to send you description, price and full particulars.

Sloan & Chace, Inc.

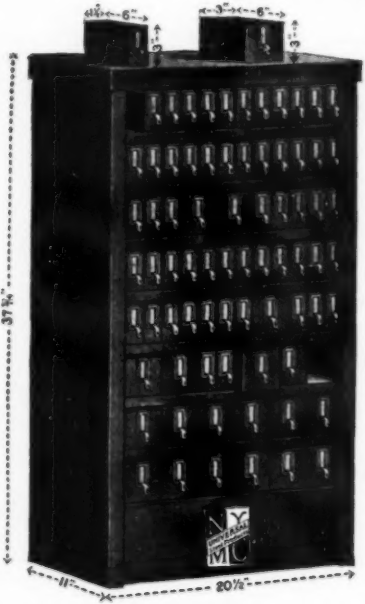
361 Sixth Avenue, Newark, N. J.

A New All-Steel Small Parts Cabinet

The handiest thing you ever saw for conveniently keeping

Bolts, Nuts, Drills, Screws

and a thousand other such small parts!



WHEREVER small parts are constantly needed—there is a need for this handy cabinet! It provides a central storage point from which small miscellaneous parts can be secured without loss of time hunting for them when they are needed quickly—your men know just where to find what they want when they want it! Pays for its installation many times over as a result of its convenience.

Made in three styles, illustrated with 56 small drawers and 20 large drawers. Dimensions of drawers are indicated in the illustration.

Also furnished with 96 small drawers only or 48 large drawers.

PRICES

Combination (56 small and 20 large drawers) as shown in illustration, **$42.75**

96 small drawers only, **$49.75**

48 large drawers only, **$39.75**

F. O. B. N. Y.

NEW YORK MACHINERY COMPANY

Phone: Gramercy 6334-6509 **200 Fifth Ave., New York City**

STEEL CLOTHES LOCKERS—STEEL CABINETS—STEEL SHOP STOOLS AND FACTORY EQUIPMENT

MARTINDALE

Electric Etcher

For marking gauges, dies, gears, saws, tools, drills, shafting and all other articles made of iron or steel. It is much quicker and more satisfactory than the old paraffine and acid method. Writes like a pencil and burns the letters in the steel, making a permanent and legible record.

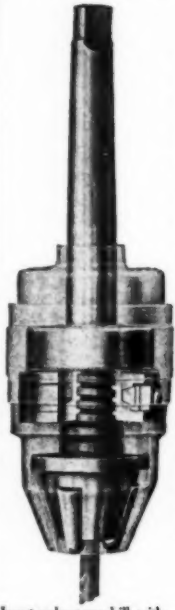
MARTINDALE ELECTRIC CO.
11704 Detroit Av., Cleveland, Ohio

Please send bulletin on Etcher to

10-26

Chuck Your Chuck Troubles

With the "NEUDECK" Full-Automatic



Insert and remove drills without stopping or slowing machine—quicker than you can say "Jack Robinson."

It Will Pay You—

to investigate this new, ultra-modern Quick Change Drill Chuck. It embodies a new development in chuck construction, which saves time and drills. You will also find it the last word in dependability and durability.

The clamping element consists of loose conical rollers, which automatically center the drill with absolute accuracy and eliminate wearing and scoring of the drill shank.

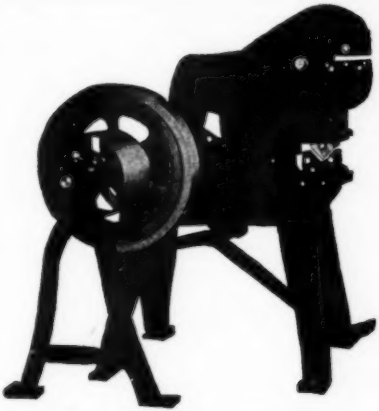
It has a large drill range, but requires neither collets nor bushings. The three sizes are backed by our one year's guaranty. Glad to let you try one for 30 days, without obligation.

DRILL RANGE:

No. 0 up to ..... 3/16"
No. 1 up to ..... 25/64"
No. 2 up to ..... 9/16"

Agents and Distributors Wanted

T. C. Weygandt Company
248 "C" West Broadway, NEW YORK, N. Y.



No. 52—Built in Seven Sizes

BELOIT

Combined Power Punches and Shears

Series 51 to 56

The Beloit Combined Power Punches and Shears offer an unequalled combination of simplicity of design, construction, range of capacity, and moderate initial cost.

Invaluable in any plant for punching, shearing and fabricating steel bars or structurals.

An indispensable equipment for the manufacture of automobile springs and bumpers.

Tell us about your Punching and Shearing requirements. Our line is extensive, and we have a Beloit Machine for your work.

Send for our new catalogue No. 11 which describes the Beloit line of Punches, Shears and Bending Rolls.

Hendley & Whittemore Co.

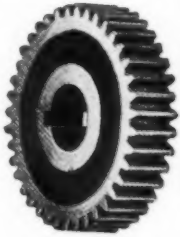
100 S. State St., -:- -:- BELOIT, WIS.

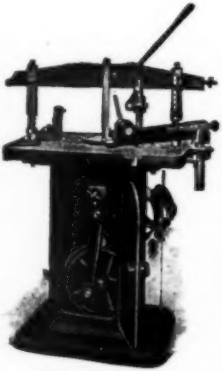
You Need a "Davis"

No matter whether you have just a few or many

Keyways

like this to cut—





No. 1 Keyseater

—you need a "DAVIS" for such work, because it will give you the same satisfactory service it gives users everywhere.

Nothing better for cutting keyways in pulleys, gear blanks, bell cranks, crank handles, etc., and for oil grooving and similar work.

Made in two sizes—

No. 1, Cap. 1/16 to 1 in.
No. 2, Cap. 1/8 to 5/8 in.

Write for complete illustrated description, including interesting table of cutting time

Davis Keyseater Company

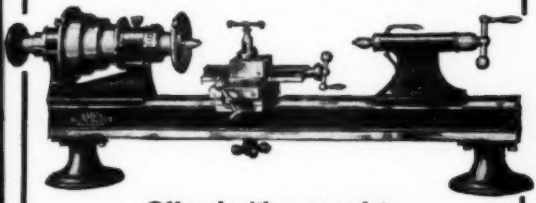
255½ Mill St., Rochester, N. Y., U. S. A.

AMES
BENCH LATHES

Used for

Turning—Milling—Drilling
Thread Cutting—Grinding
Filing—Polishing

Length of Bed	36"
Swing over Bed	8⅝"
Max. Dist. between Centers . . .	21"



Offered with a complete line of attachments

SEND FOR CATALOG

B. C. Ames Co.
Waltham, Mass.

Please send me complete information about AMES BENCH LATHES

Name .....

Address .....

H10 .....

Ideal for Many Operations

Genesee Adjustable Hollow Mills

SUPERIOR for finishing forgings, castings, etc. They are easily and quickly adjusted to the 1000th of an inch, and are designed to utilize machines to their full capacity. When worn, the blades can be replaced at very small cost.

EASILY FITTED with drills and reamers, have formed blades, etc. The blades can be ground any angle to point work and turn short tapers. They cut up to 15" a minute in steel, are stronger than solid tools, and cannot change in size.

SEVEN SIZES cover all work from ⅛" to 2". The Genesee is now made in six styles, from the heavy roughing Style "B" to the accurate finishing Style "F." We also make Style "N" Mills for all Brown & Sharpe automatics. We can make special sizes and styles to your order, at prices that mean real economy.

As all round cost reducers Genesee Mills are a revelation to users everywhere. We invite your correspondence.

Genesee Manufacturing Co., Inc.

Rochester, N. Y., U. S. A.

Manufacturers of Genesee Rapid Production Tools. ***Est. 1908***

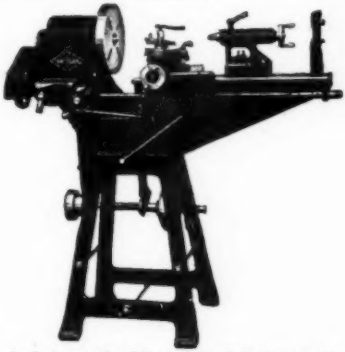
Unmatched In Value!

For more than four years, the "Artisan" Lathe has been the outstanding value in the Small-Lathe field. FIND OUT FOR YOURSELF—

IF any other Lathe, within $150.00 of its price, will turn out as great a volume or variety of actual Lathe-work.

IF any other Lathe, within $300.00 of its price, is more modern in design, more compact in construction, or more distinctive in finish and general appearance.

IF any other Lathe, AT ANY PRICE, is backed by a more dependable guarantee of complete satisfaction to the purchaser.



Isn't it worth while to have full particulars of this machine before you?

Think it over. Then write to:

Artisan Manufacturing Company

837 West Sixth St., CINCINNATI, OHIO

Drills to the center of a 10" circle.

Capacity, 3/8" diameter.

Up and down run of spindle, 2½".

Up and down run of table, 7".

$44.00

110 volt, 60 cycle, single phase.
Other voltages on application.

Ready for the Job

Another Original Canedy-Otto Feature

That of first offering an electric bench drill completely equipped and ready for the job, the improved design eliminating the use of all gears and placing the cone pulley in exact alignment, enabling the belt to be run at its maximum speed. It also eliminates all twists and turns of the belt, meaning both a saving of belts and time, giving a greater speed of spindle, a feature of great advantage when using drill for small diameter.

Regular equipment consists of vertical type ball-bearing motor, toggle type switch, extension cord, socket, belting and chuck.

Canedy-Otto Manufacturing Company

Main Offices and Factory—Chicago Heights, Illinois

New York Branch
407 Broome St.

Complete stock carried at branches

San Francisco Branch
955 Folsom St.

Ettco

New All Hardened Drill Chuck

To keep pace with the demands for Increased Production and Lower Maintenance Costs, Ettco Drill Chucks are now being made with All Hardened Steel Parts. They are stronger and better.

1. *Lighter in Weight.*
2. *All Hardened Parts.*
3. *Keyless.*
4. *Hand Operated.*
5. *Ball Bearing.*
6. *Continuous Grip.*
7. *Simple Construction.*

Seven good reasons for using the new Ettco.

Cash in on your old Drill Chucks. Send them to us and we will allow 15% on the exchange from the following list prices:

No. 1A	Ettco— 0 to ¼ in.	$ 5.50
No. 1½A	Ettco— 0 to 5/16 in.	6.00
No. 2A	Ettco— 0 to ⅜ in.	6.50
No. 3A	Ettco— 0 to ½ in.	9.00
No. 3½A	Ettco—⅛ to ⅝ in.	11.00

Ettco Chucks increase the value of electric drills

Eastern Tube & Tool Company

600 Johnson Ave., Brooklyn, N. Y.

The Rapid CATLIN Keyseaters

Reduce Shop Costs Everywhere

Let us have your inquiry today. We shall be glad to answer questions and to mail you an interesting folder. Why postpone?

Successful in
Automobile Plants
Government Shops
Navy Yards
and many big
Domestic and
Foreign Factories

Whether you need one keyseat or a thousand, the rapid "Catlin" will cut them to even better than 1000th of an inch accuracy. And its great speed explains its great economy. It cut a keyseat 6" long, 1" wide and 7/16" deep in a cast steel hub, in 3 minutes; this was in ordinary shop practice, with no attempt made to establish a record.

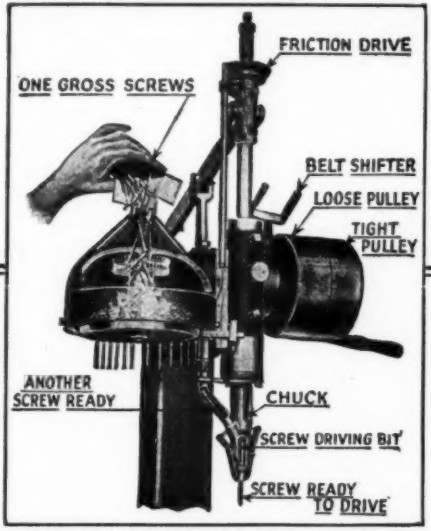
The picture shows the No. 1 Catlin, belt driven, with three-step cone pulley. Our other sizes, for belt or motor drive, cover practically all keyseating requirements.

Chattanooga Machinery Company

2401 Bennett Ave., Chattanooga, Tenn.

Investigate This Method of

Reducing Screw Driving Costs



Magazine Feed of the Reynolds Automatic Screw Driver

IF THE REYNOLDS Automatic Screw Driving Machine, with its magazine feed, is paying for itself three or four times a year in many of the best plants of the country; if boys and girls in those plants are driving 800 to 1,200 or more screws an hour on the "Reynolds" with mechanical precision, ***isn't it at least worth investigation?*** When writing, please tell us dimensions over all of your work and length and gauge of screws used. We may surprise you.

The Reynolds Machine Company

Dept. H. H., Massillon, Ohio

GITS BROS.

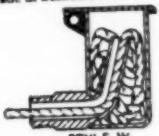
Standard of Comparison

Better Oilers

Quality-Schedule Delivery-Price

Gravity and Wire Wick Feed Oilers

Gravity Feed—flushes the bearing.
Wire Wick Feed—gives desired prolonged feed.
Wire Wick—replaces waste or felt.
Made in Standard sizes.



Catalog Sent on Request

Gits Bros. Manufacturing Co.

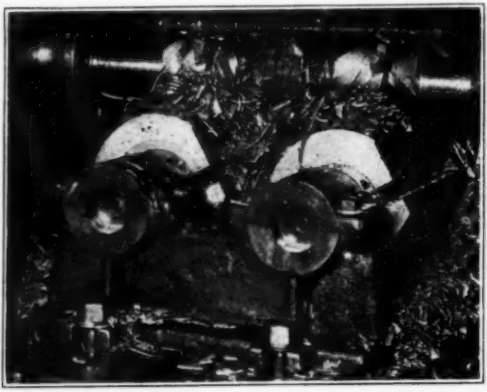
1940 S. Kilbourn Ave. Chicago, Ill.

Barber-Colman
Production
Milling Cutters

—make the machine
on which they are used
a better service unit.

Complete data on request

Barber-Colman Company
General Offices and Plant
ROCKFORD, ILL. - - U. S. A.



STARK 4 IN 1

TAP WRENCH

Economical Equipment,

Look over your equipment of Taps—practically all of them have the shanks chewed up so badly they are ready for the junk heap.

A needless waste and expense.

The cause of this extravagant waste is your present equipment of Tap Wrenches. They do not hold the Tap solidly—the handle loosens, with the result that the Tap is broken or the shank is badly chewed.

The Stark is the only wrench which grips the Tap solidly on four sides—and holds it independently of the handle. The Tap can not loosen and the shank is never damaged.

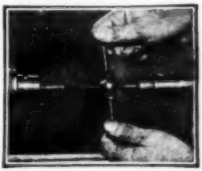
This is another reason why the Stark reduces Tap, Broach and Reamer replacement expense 50 to 75%.

Replace your present equipment. The saving in 30 days will more than pay the cost.

Worth More but Cost No More than others.

Ask your supply man

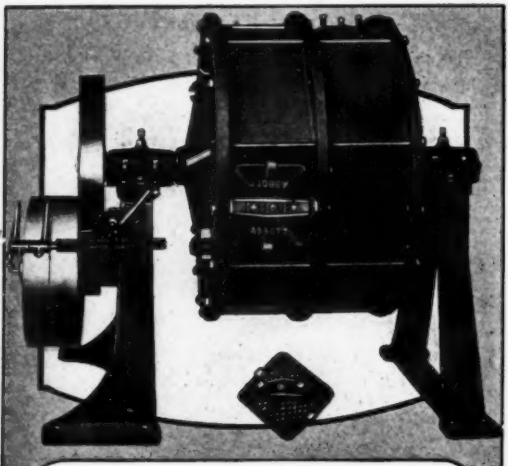
Tapping in Lathe



Always in perfect Center

Stark Products Corporation

3809 N. Clark St., Chicago, Ill.



Barrel Burnishing is Better Burnishing.

Frequently, the finishing department is the "neck of the bottle". Possibly your finishing department slows up your output. In any event, if you have small metal parts to finish, either before or after plating, the chances are you can do it better, faster and at lower cost by adopting the Abbott Method of Ball Burnishing.

Send us samples of parts you have to finish. Put it up to us, without obligating you, to *show* you how to do better polishing at a lower cost.

THE ABBOTT BALL COMPANY

"Originators of Commercial Ball Burnishing"

1043 New Britain Ave., Hartford, Conn.

Tapping Revolutionized!

One user reports a 300% increase in production.
Making good in many of the biggest plants in U. S.

"Let AIR do it—"

This machine automatically carries out the principle of hand tapping.

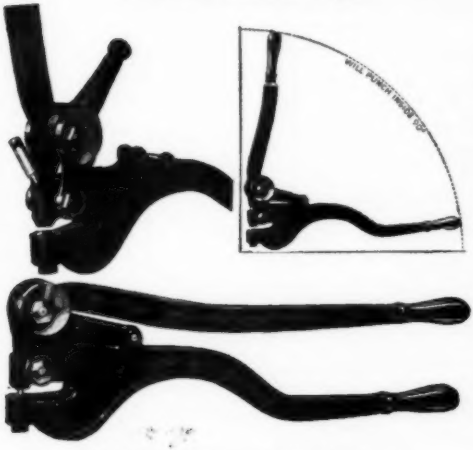
High Speed Pneumatic Oscillating Tapping Machine

We make guaranteed production estimates.

W. GATERMAN MFG. CO., Manitowoc, Wis., U.S.A.

Imperial Punch No. 8

Roller Bearing



CAPACITY ¼-INCH THROUGH ¼-INCH

Punch in center of	4¼ inches
Length over all	25½ inches
Weight	16 lbs.
Height of gap	⅜ inches
Depth of throat	2⅛ inches

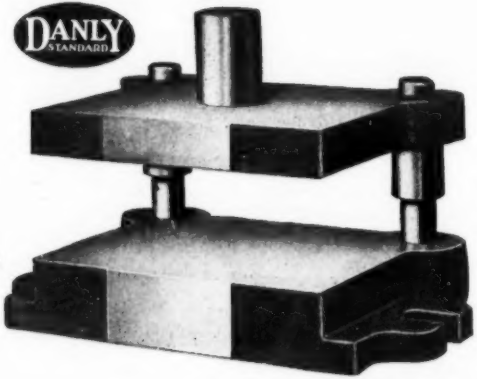
We can furnish base for Bench purpose. Operating handles will not become disengaged. Roller Bearing. Drop Forged. No cams to wear out.

Just right for standing seams or sky-light work. Large throat clearance.

WRITE FOR PRICES

WHITNEY METAL TOOL CO.

95 Forbes St., Rockford, Ill.



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DIE SETS

—standard equipment with almost 4000 of the Nation's leading manufacturers.

—precision tools embracing every known refinement in design, materials and workmanship.

—available immediately from stock from nearest warehouse.

—save 20 to 50% in first cost alone.

—can be ordered by telegraph or 'phone—so convenient.

Send for the Danly 34-page catalog—a standard handbook among 10,000 designers, draftsmen, superintendents, etc.

There are 12 types and 97 sizes of Danly Die Sets, ready assembled, available for immediate delivery from stock at all warehouses.

Danly Machine Specialties, Inc.

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Long Island City, N. Y.
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National-Cleveland Cutters

Quality Tools for Over 20 Years

HEAVY DUTY

Gear Shaper Cutters—Hobs—Reamers—Milling Cutters and Special Tools

When you buy ***"NATIONAL-CLEVELAND"*** tools you have the assurance that they will fully uphold the reputation that you wish to maintain in your product, for ***"NATIONAL-CLEVELAND"*** is the symbol of better tools.

The quality that permits re-orders for ***"NATIONAL-CLEVELAND"*** tools is a reliable guide for all who seek dependable and economical service.

The National Tool Company

11200 Madison Ave., Cleveland, Ohio

NEW YORK
41 Murray St.

PHILADELPHIA
816 Chestnut St.

DETROIT
5-116 General Motors Bldg.

CHICAGO
624 Madison Terminal Bldg., 9 South Clinton St.

Makes Old and New Cranes Safe!

Canton New Safety Friction Load Brake

Furnished at small extra cost on all "Canton" Portable Cranes, Hoists and Trucks, and easily applied to those already in service.

This Brake holds the load at any point, making it impossible for the load to get away, and insuring safety to both operator and work.

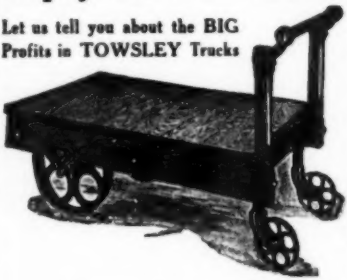
"CANTON" CRANES are made in several sizes. Write for Booklet E-8.

CANTON FOUNDRY & MACHINE CO., Canton, Ohio

New York Office: 203 East 15th Street, Second Floor

Repay Cost 5 Times a Year

Let us tell you about the BIG Profits in TOWSLEY Trucks



Efficiency EXPERTS say that

TOWSLEY TRUCKS

repay their cost every two to three months.

Every style for every need.

Glad to send you complete data and prices

John T. Towsley Mfg. Co., Cincinnati, Ohio

TRIBLOC CHAIN HOISTS

No need to coddle these hoists!

In the busy shop there is no place for equipment that must be coaxed into giving quick, smooth and positive operation.

Tribloc need no coddling or coaxing to give their best—whether the work is in the grimy, dusty foundry or the extremely clean, bright food factory. The harder and dirtier the work, the more important the consistent service of Tribloc Chain Hoists becomes.

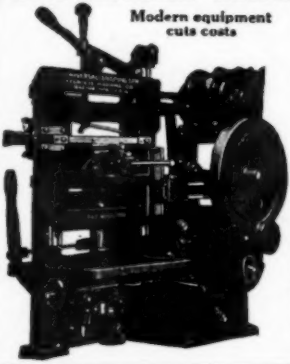
Let us send you Catalog 7-B.

FORD CHAIN BLOCK COMPANY

2nd and Diamond Sts., Philadelphia, Pa.

We also manufacture "THE MOTORBLOC"
—an electrically driven chain hoist.

—PEERLESS—
UNIVERSAL SHAPING SAW



Modern equipment cuts costs

Different Principles
Greater Efficiency

Give The Most Of—

Speed
Accuracy
Blade Economy

SIZES:
6"x6"--9"x9"--13"x13"

PEERLESS
HIGH SPEED HACK-SAWS
6"x6" 9"x9" 13"x16"
Sturdy--Efficient--Reliable

Peerless Machine Co.
1218 Sixteenth St.
Racine, Wisconsin

Write for Details

Cleveland Open Side Planers

To be sure of results in reducing your manufacturing costs, use CLEVELAND OPEN SIDE PLANERS, as over 1070 others are doing.

Send for descriptive circular

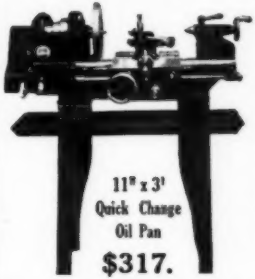
Box Tables; Improved Head Clamp; Power Rapid Traverse; Self Oiling Bushings throughout Drive; Counterbalanced Side Head; Single Turn Rail Clamp; Automatic Trip to Rail Raising Mechanism. Forced Feed Lubrication to Vees if desired.

26' to 72'

The Cleveland Planer Co., 3148 Superior Avenue, CLEVELAND, OHIO

Established in 1900

Monarch Jr. Lathes



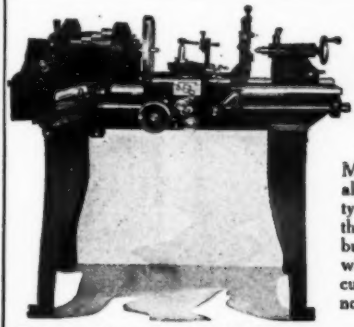
are the smallest members of the Monarch lathe family. Yet they are the "biggest little lathes" built.

The Monarch line of lathes includes all sizes and types from the little 9-inch Junior lathe to the big, massive 30-in. lathe. In this line there is a lathe to fill your requirements at the price you want to pay.

Send for Catalog

The Monarch Machine Tool Co.

206 Oak Street, Sidney, Ohio



Another Sidney Lathe

Our 11" x 4' Medium Pattern, all geared head type. It is up to the minute with built-in features which insure accuracy and economical service.

Write for catalog and prices on the complete line of Sidney Lathes. Address Dept. 1801

The Sidney Machine Tool Co.

Sidney, Ohio

SIDNEY SERVICE

ARMSTRONG COMPLETE LINE OF Ratchet Drills

Packer, for rough service; ***Standard,*** for general use; ***Weston,*** extra heavy; ***Universal*** and ***Short Racket.***

Write for our Ratchet Drill Catalog

The Armstrong Universal

The "Universal," shown above, may be used in awkward corners and confined spaces where other Ratchets are useless. Often pays for itself on a single job. Simplest, strongest, fastest.

Armstrong Bros. Tool Co.

"The Tool Holder People"

308 N. Francisco Ave., Chicago, U. S. A.

"Bridgebilt" Factory Seating and Tool Racks

A diversified line to meet requirements of every branch of industry.

The Bridgebilt line will give long and satisfactory service

For illustrated price list and discounts write—

The Chicago Wire Chair Co.

619 No. LaSalle St., Chicago, Ill.

No. 1010-SWS

HARDINGE

SUPREME SERVICE

The Cataract Line

of Lathes embodies the highest standards of Quality and Workmanship. *Catalog on request.*

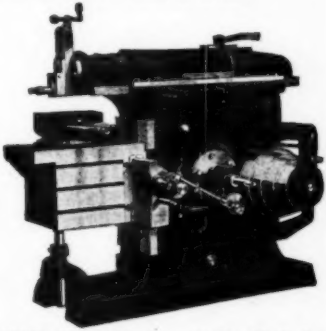
Hardinge Brothers Inc.
4149 Ravenswood Ave. Chicago Ill.

SHAPERS

12", 14", 16" Plain Crank, 16", 20", 25" B. G. Crank, either Cone Driven or through Speed Box.

Belt Shifter Regular Equipment All Cone Driven Shapers.

32" Back Geared Crank, Single Pulley Drive.



The Smith & Mills Co., Cincinnati, O., U.S.A.

"Ideal" Pump Does Just Ideal Work!

The single cylinder "Ideal" Electric Automatic Air Compressor and Exhaust Pump delivers two cubic feet of free air at 300 R. P. M. Quarter H. P. motor required for 200 lbs. pressure.

Price, pump only, $22.50

← SINGLE CYLINDER

TWIN CYLINDER →

The twin cylinder pump delivers four cubic feet of free air at 300 R. P. M. Half H. P. motor required for 200 lbs. pressure.

Price, pump only, $32.50

Our Pumps are used for Spray Guns, Glass Blowing and general commercial and laboratory blowing and suction purposes.

PETRICK BROTHERS
2226 Belmont Ave., Chicago, Ill.

The "GUSHER"

The Last Word in Machine Tool Coolant Pumps—

OF HIGHEST efficiency, requires the least power, and stands the wear and tear of modern shops almost indefinitely.

"GUSHERS" are ball bearing, have no gears, no foot or relief valves, no packing nuts, need no priming, and are not injured by grit or small chips.

CAPACITIES, 3 to 30 gallons per minute. Furnished with individual motors for any current, also for belt drive.

May we send Catalog and prices?

The Ruthman Mchy. Co.
528-534 E. Front St.
CINCINNATI, OHIO

Sent on trial

The Cincinnati

Portable Electrics
Stay on the job.

Hand and Screw Feed Drills ¼" to 2½" cap.
Portable Scotch Radial Drills 1¼" to 2" cap.
Tool-Post Grinders.....¼ to 3 H. P.
Bench and Pedestal Grinders...¼ to 5 H. P.
Hand and Suspended Grinders..¼ to 3 H. P.
Polishing and Buffing Lathes..½ to 7½ H. P.

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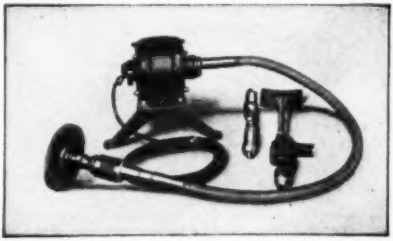
The
Cincinnati Electrical Tool Co.
2678 Madison Road
Cincinnati, Ohio

The Whirlwind Buffer and Grinder

Will cut the cost on any unhandy grinding or polishing job



Send for our latest bulletin

Stow Flexible Shaft Co., 3454 Ludlow St., Philadelphia, Pa.

The Best Since 1876

Send for this FREE CHART

Rear view showing motor mounting

Capacity 4 in. Can be used as a portable. Not necessary to bolt to floor. Runs from electric light or power circuit. Ask for bulletins on Racine High Speed Metal Cutting Machines of every Capacity to 15 in.

New Improved "RACINE" JUNIOR

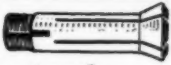
WORM GEAR DRIVE direct from motor is now used. All gears enclosed and running in oil. New Improvements in combination with old superiorities make Racine Junior absolutely free from vibration. The quietest, smoothest running as well as the fastest and most accurate metal cutting machine of its capacity.

Use "Racine" H. S. Wood and Metal Band Saw Blades & "Racine" H. S. Tungsten Power and Hand Hack Saw Blades. *Catalog H.*

Racine Tool & Machine Co.
1429 Junction Av., Racine, Wis.
"STANDARD THE WORLD OVER"

HARDINGE

COLLETS



Guaranteed In Every Way

An experience of 30 years enables us to guarantee the quality, accuracy and workmanship of "HARDINGE" Thrust Collets and Draw Back Chucks. We will also make them to your exact specifications. *Glad to send you full data.*

Hardinge Brothers Inc.
4149 Ravenswood Ave. Chicago Ill.

Machine Steel Discs

1 to 12-Inch Carried in Stock

NO NEED NOW to wait or worry when in need of any size disc from 1" to 12" in diameter, any thickness, and in any quantity from one to a thousand or more.

This is a New Service

WRITE, WIRE OR TELEPHONE US TODAY—your order, and we will ship promptly. We make a specialty of supplying users what they need, and are equipped to give you dependable, economical service.

Send us your requirements and we will quote

PASSMAN BROS., 707 Washington Blvd., Chicago

Telephones: Monroe 6960—6961

Universal Angle and Surface Plate

For Drill Press, Shaper, Lathe or Miller

Price, $35.50
Weight, 60 lbs.

The handiest equipment in the shop. Speedily set to any desired angle, and when locked becomes a *rigid* fixture.

On the bench it serves as a convenient surface plate for testing and laying out work.

Each face is 9"x10". When assembled, it makes an angle plate 10" square. Made from select gray iron, accurately machined and graduated.

UNEQUALLED VALUE.

Can ship promptly.

Advanced Engineering Co.
464-468 Seventh St., San Francisco, Calif.

Atlas Arbor Presses

For All Forcing Operations

Illustration shows our No. 55 Power Drive Press, which is adaptable for fast production work and capable of supplying ten tons pressure.

Write for our Bulletin—showing 30 different sizes

Atlas Press Co.

Department B,

Kalamazoo, Michigan

Lourie Hydraulic Arbor Presses

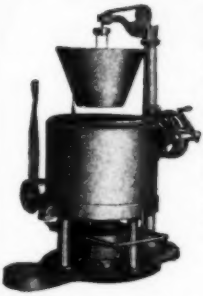
A complete line of Presses for any purpose. Made of any tons capacity and size. Either hand or power operated.

Send for Catalog

LOURIE HYDRAULIC CO.

SPRINGFIELD, ILL.

Wasting Oil Is Costly—



Use a CURTIS!

Most of your cutting oil is taken away on chips, and unless reclaimed, it is a total loss. A Curtis will save about 90% of this oil, thereby stopping a costly leak.

The Curtis is made with capacity for all requirements, belt or motor drive. The illustration shows our No. 400, with a capacity of 20 bushels per hour.

One man runs two, easily turning out 40 bushels per hour.

A Curtis always pays big dividends. Write us today for complete data and prices.

The Leon J. Barrett Company
Grafton St., Worcester, Mass.

Actual Riveting Results

Are Most Convincing

Send us samples of your most difficult work, in close corners or out-of-the-way places, let us rivet them on the—

Grant Rotary Riveter

—and we will return them with time and cost estimate.

The "Grant" produces highly polished heads, without hammer or tool marks. Speed, a rivet per second. May be operated by cheap help. And it's noiseless.

Send along your samples for riveting
And ask for the Catalog

The Grant Mfg. & Machine Co.
C. E. Station, Bridgeport, Conn.

A BLESSING For Users of Bar Stock of All kinds

EVERYONE who has pipe, shafting or bar stock about his plant, should have—

"The Handiest Racks"

—for keeping it neatly piled and properly assorted in a fourth the usual space.

PARTICULARLY valuable for ***keeping bar or screw machine stock at the machine*** when working it up into parts or small manufactured articles, saving many steps and much valuable time.

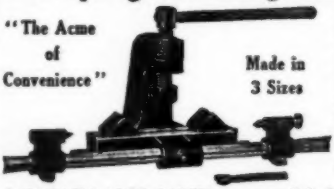
On trial? Sure! Better write today

Wm. S. Yohe Supply Co.

503 Mahoning Road, N. E., Canton, Ohio

The Springfield Straightening Press

"The Acme of Convenience"



Made in 3 Sizes

Invaluable in the tool room, also for straightening crank and cam shafts and other automobile parts.

A GREAT LABOR SAVER, as you will find the arrangement of this Press makes it the very ***acme of convenience.*** Any work within the range of centers may be tested and straightened without unnecessary walking from press to lathe each time in straightening rough or finished work. Any length, however, may be operated upon. Of "**Springfield Quality**" thruout.

Write for folder illustrating many of its uses

The Springfield Machine Tool Company

633 West Southern Avenue, SPRINGFIELD, OHIO

We also manufacture Engine Lathes and Shapers

Curtis Universal Joints

of Simple, Rugged Construction

Send for circular

BOSTON GEARS

BOSTON GEAR WORKS SALES CO.

Norfolk Downs, Mass.

BOSTON NEW YORK PHILADELPHIA CLEVELAND CHICAGO

BIAX

makes flexible shaft machines for drilling, boring, grinding, polishing, screw-setting, nut-setting, etc.

Also special machines for—

Automobiles
Speedometers
Woodworkers
Railroads
Street Railways
Welders
Pattern Shops Machine Shops
Boilers (Cleaning)—Foundries
Motor Repair Shops

Write us today about your work, and we may be able to save you money.

Biax Flexible Shaft Company

136 Liberty Street
NEW YORK CITY

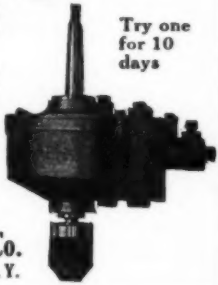
Mid-West Distributor:—Tachometer Division Elgin National Watch Co., Chicago, Illinois.
New England Distributor:—Biax Flexible Shaft Co., Worcester, Mass.
Southern Distributor: Biax Flexible Shaft Co., Charlottsville, Va.

How would you like—

Ettco

to tap small holes as easily as you drill them; to tap them 2 or 3 times faster than usual; to wear out the small taps you are now breaking?

The Ettco High Speed Tapping Attachment usually increases output 100%. When a Gun Tap can be used the increase is as high as 300%.



Try one for 10 days

Try one for 10 days—if you can then spare it, send it back.

Eastern Tube & Tool Co.

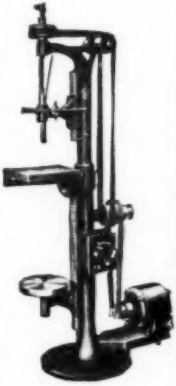
600 Johnson Ave., Brooklyn, N. Y.

The U. S.—

A Complete Motor-Driven

14" Sensitive Floor Drill

Price with motor, switch and belts -	$115
Or with Counter-shaft for Belt Drive	$70



Nothing Better for the quick and accurate drilling of holes ½" and smaller. Steel spindle, ground to size, with ball thrust bearing; vertical adjustment to head; tables for long and short work; three speeds, etc. Send us your order, or ask for more data.

The U. S. Machine Tool Co.

1952 W. 6th St., Cincinnati, Ohio

Specialists In small and medium size Gears

Specializing in the above, with the most modern facilities and skilled gear mechanics, we can offer especially good service.

ALL TYPES—spurs, internals, bevels, mitres, helicals, spirals, worms, worm gears, sprockets, ratchets. ANY MATERIAL—steel, cast iron, brass, bakelite, aluminum, fibre, rawhide. ONE QUALITY—the best obtainable. Also a full line of ***stock gears*** for immediate delivery.

Massachusetts Gear & Tool Company

36 Nashua Street, Woburn, Mass.

"Borgeson Universal Joints"

Are you a user of Universal Joints?
If so!

Remember well and bear in mind that a good Universal Joint is hard to find. But if you want one tried and true, you will want the "Borgeson" before you are through.

You will become not only a "Buyer" but a "Booster" for "Borgeson."

SIZES: ⅜, ½, ⅝, ¾, ⅞, 1, 1⅛, 1¼, 1½, 1¾, 2, 2½, 2⅞.

Should you require Special Universal Joints, be sure to write for quotation.

Complete description gladly furnished upon request

The Borgeson Mfg. Co., Inc.

Torrington, Conn.

BURKE TOOLS

Sensitive Bench Drills, Milling Machines, Tapping Machines and Attachments.

Production on small parts.

Why do garage men use Burke Tools?

Service is what counts.

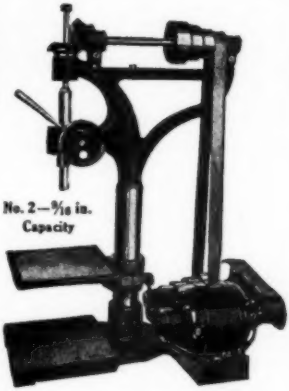
Send for catalog and price list

At your service—

The Burke Machine Tool Company

297 East 16th Street

Conneaut, Ohio



No. 2—5/16 in. Capacity

No. 2 ALTO Motor Driven Three Speed Tapping Machine

SAVES—time.

SAVES—taps.

SAVES—in the first cost and in the long run.

Its main points are—

Motor driven, 3 speed, double speed reverse, quick change, back geared friction clutch. Sensitive for small tapping and powerful enough to drive 5/8" taps through steel.

We also make smaller high speed tappers.

Write for descriptive literature and attractive prices

The Alto Mfg. Co., 1647-51 Wolfram St. Chicago, Ill.

USE the CHICAGO No. 2

POWER PIPE THREADING MACHINE

For
Production and Precision Threading

PORTABLE

Capacity:
¼" to 2" Pipe
½" to 1½" Bolt

Featuring:
1. Quick Die Change
2. Automatic Die Head
3. Three Speeds
4. Perfected Oil Control

Send for Catalog

Chicago Pipethread Machine Co.

Office and Factory: 1623 Racine St., Racine, Wis.

Adjustable Threading Dies FOR BOLTS AND RODS

Requiring no reversing to remove them.
Also adjustable centering jaws in the new pattern

"DUPLEX" Die Stock Set

Each cutting edge on separate flat piece makes sharpening easy. Wide adjustment.

THE HART MFG. CO., 2319 E. 20th St., CLEVELAND, O.

Save Time Setting Gang Milling Cutters

Eliminate Thin Washers

Hardened and Ground

PATENTED

"Wear-Ever" Adjustable Spacing Collars permit setting cutters to the thousandth part of an inch without removing from the arbor.

Stock sizes for ¾" to 2½" arbors, sent on approval They are adjustable in 12 steps of 2/1000 inches

SCULLY-JONES & CO. *TOOL DIVISION*
13th and Robey Streets **CHICAGO, ILL.**

Steel Spacing Washers—

Made of a good grade of Cold Rolled Strip Steel, also known as Shim Steel

Stock sizes for arbors of following diameters: ⅜, ½, ⅝, ¾, ⅞, 1, 1⅛, 1¼, 1⅜, 1½, 1⅝, 1¾, 1⅞, 2, 2¼, 2½, 3, 3½ and 4 in. and larger.

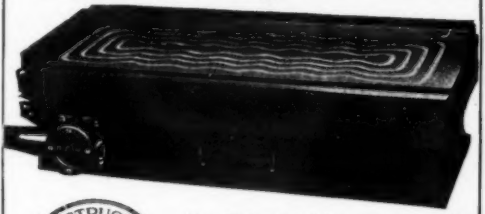
Stock thicknesses: .002, .003, .004, .005, .006, .007, .008, .010, .012, .015, .020, .025, .032, .047, .063, .093 and .125 inch.

Other thicknesses up to 3.000" made to order, with keyways if so ordered.

Ask us to send samples; you'll like them

Detroit Stamping Company
3443 West Fort St., Detroit, Mich.

"D & W" Flat & Rotary Magnetic Chucks



INDESTRUCTIBLE MAGNETIC CHUCKS D&W REG. U.S. PAT. OFF.

Our Extensive Line covers a wide range. They save time and cut costs holding iron and steel pieces. Glad to investigate and report on any problem you may have in connection with the use of Flat and Rotary Magnetic Chucks. Address

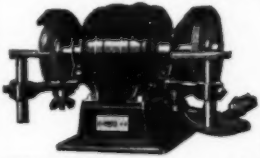
J. & H. Electric Co.

161 Clifford St., Providence, R. I.

Competition—

Makes Efficient Tools a Necessity!

The Sharpest Tools are the Most Efficient



THE BODINE
Portable Electric
TOOL GRINDER

Is the one machine which has correctly solved the problem of keeping tools sharp.

THE BODINE isn't "just a grinder." It is a highly specialized tool for increasing profits by increasing production. It makes it so easy to keep the cutting edges of tools at maximum efficiency.

Write for a copy of "*Eight Outstanding Advantages.*"

The Bodine Electric Company
2244 West Ohio St., Chicago, Ill.

Type 6

New "AUTEX" Extension Reel

1926 Model

Don't Forget the Swivel Joint Feature

Permits of carrying the lamp in any direction.

Rapidly finding a place in large Industrial Plants, Machine Shops and Service Stations.

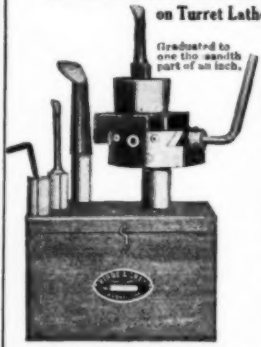
Now equipped with Belden Rubber Cord
Approved by the Underwriters

Write for descriptive circular

The Cincinnati Specialty Mfg. Co., Inc.
1903 Powers St., Cincinnati, Ohio

R & G Adjustable Boring Tool

Invaluable in the Tool Room and on Production Work on Turret Lathes, Horizontal Mills, Etc.



It saves time and insures accuracy in boring jig plates, dies, etc., on milling machine table and drill press, that cannot be handled on the lathe. It readily trues to size holes drilled on turret lathe.

Only $38

If standard taper shank is required, the price is Five Dollars extra.

Send us your order or write for complete description of this handy, time-saving outfit.

Ribbe & Grey
La Porte, Ind.

For Sure Balance--

an absolutely level and solid "Way" is necessary

Bowsher "Balancing Ways"

are brought to an absolute *level* in ten seconds. No revolving parts.

The edges or "knives" upon which the work is tested are ground *true*, and are mounted upon the planed "ways" of a heavy bed or frame.

Standards adjustable to suit length of arbor.

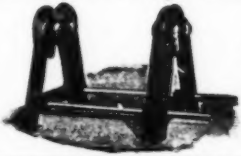
Three sizes for floor—one for bench use

Send for Catalog "F"

The N. P. Bowsher Co., South Bend, Ind.

The Anderson Improved

Ever-Ready Balancing Ways



For quickly balancing 'most anything that revolves, up to 24,000 lbs.; for testing straightness of shafts, crankshafts, etc. Always ready; no centers or leveling required. Glass-hard spindles do not lose accuracy; chilled iron discs; sensitive bearings.

"Swing"	20"	40"	60"	72"	96"	72"
Greatest distance bet. standards	20"	30"	30"	66"	88"	20'
Capacity in lbs.	1000	2000	2000	5000	10000	24000
Approx. shipping weight	45	90	150	350	650	
Code	Bead	Bid	Bis	Bib	Bes	

Any of above can be furnished with longer shafts

Anderson Bros. Mfg. Co.

1915 Kishwaukee St., Rockford, Ill.

S. & S. 10" Vernier Caliper

Optical lapped finish of measuring surfaces; open face slide, finest tool steel, glass hard. Verniers reading 1-1000" and 1-128". $12. Ask for our *Free Trial* proposition. ***Shop Agents wanted everywhere.***

S. & S. Spring Taper Sleeves

salvage tools with broken tangs instantly. No fitting necessary. Just slip over defective shank and tool is ready for use again.

SCHUCHARDT & SCHUTTE of NEW YORK

GEORGE SCHERR CO., 142a Liberty St., NEW YORK

The Drill Chuck

You've Been Looking For

THE "TITAN" has the best features of other high-grade chucks, plus—

A Real Quick Change

No separate key to get lost. No hammer or special device required. Simply strike end of drill and out it comes. A one-armed man can do it.

Sizes Nos. 0 to 5, for any taper shank drill, counterbore, reamer, etc. The broken tang collet gives a positive drive to drills with broken tangs. Saves time. Uses up broken drills. Saves money.

Write for descriptive price list

Titan Tool Company

Erie, Penna.

THOMPSON
10"x36"
Universal

ALL Grinding on ONE Machine—

Thoroly efficient, accurate and dependable. Work adjusts to a fixed grinding wheel—an exclusive feature that's better.

For finest plain, surface, edge, die, cutter and internal grinding.

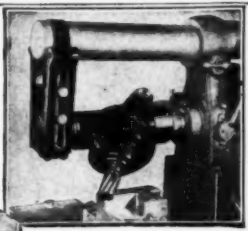
Write for Bulletin TODAY

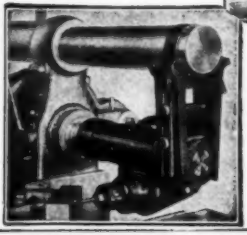
Saves Time and Money

The Thompson Grinder Co.
Springfield, Ohio

REDUCE Set-ups on intricate work with the

New Hevy-Du-T
Universal Milling Attachment





Allows the spindle to operate at any angle in any plane. On or off any milling machine in three minutes. Write for the interesting details today.

PORTER-CABLE
MACHINE CO.
Salina St., Syracuse, N. Y.

E-Z THREAD DIAL

This device on your lathes will lower the cost of, and increase the efficiency of, thread cutting.

Can be attached to all size lathes.

E-Z to install.

E-Z to use.

Eliminates stopping or reversing the lathe.

Saves cost of backing belt.

Saves power to drive same.

Fast growing in popularity.

A large corporation ordered nine at one time. Another five.

Sent on thirty days' trial.

Send for folder today.

JAMES M. COLVEN, 20 Wolffe Street, Yonkers, N. Y.

FEDERAL

PRECISION DIAL-INDICATORS

for

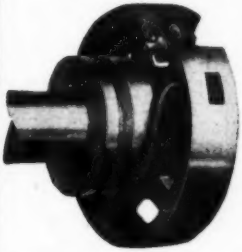
every conceivable measurement

Send for bulletin

FEDERAL PRODUCTS CORP.
PROVIDENCE R.I.

Conways Lead in Compactness

Also in Simplicity and Convenience

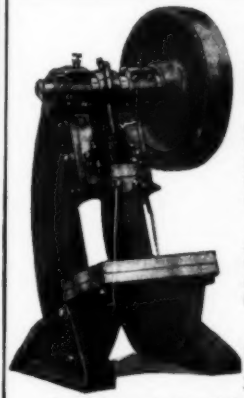


The picture shows the CMT Close Coupled Clutch, single type, specially designed for cramped and crowded installations where the clearance is in fractions, and where transmission of power must be effected in a minimum amount of space. None of the standard Conway features is sacrificed in this design except the full length shaft bearing. We also make the double type.

Conway Clutches always make good. Write for Bulletin No. 26 today.

The Conway Clutch Company

1951 Riverside, Cincinnati, Ohio



Trade **Verson** Mark

Punch Presses

are suitable for a large variety of blanking, forming, and other press operations, and handle such light work as is often done on larger presses.

One of the features is the Automatic Safety Clutch, which is a positive prevention of accidents which are due to the repeating of presses.

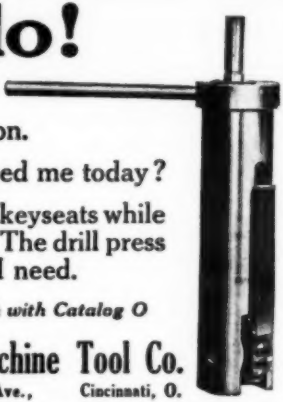
Write for catalog

LaSalle Machine Wks.

3013 S. LaSalle St., Chicago, Ill.

Specializing in Small Presses and Angle Shears

Hello!



Self-
Introduction.

Do you need me today?

I mill your keyseats while you wait. The drill press is all that I need.

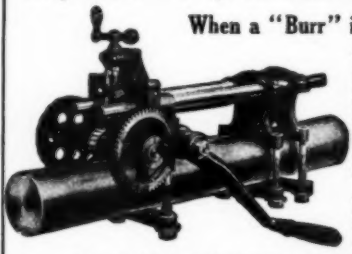
Get in touch with Catalog O

National Machine Tool Co.

2268 Spring Grove Ave., Cincinnati, O.

Why dismantle your shafting—

When a "Burr" is available?



This handy portable keyseater is always ready—whether for an emergency case or routine work. Cuts accurate keyways up to 12" long anywhere, in any position, in shafts up to 5" diameter.

Operated by hand or motor. Over 10,000 already in use. Your choice of seven sizes. Why not order one now and be prepared?

JOHN T. BURR & SON

422 Kent Ave., Brooklyn, N. Y.

Rockford Hi-Duty Punch Presses

are deliberately built for Hi-Production Service and **they deliver.**

Their punch-ability will surprise you. All types and sizes.

Write for catalog

Rockford Iron Works, Rockford, Ill.

T. H. L. Punches

Insure Continuous and Profitable Production

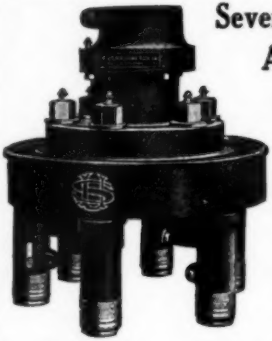
Because they are made of the right quality of tool steel.

Because they are hardened with every care.

Because all our experience of 35 years is centered in making them accurate, rugged and dependable.

Large stock of regular sizes
Special sizes quickly made

T. H. Lewthwaite Machine Co.
311 East 47th St., *(Est. 1890)* **New York City**



Several Holes—
At Cost of One

A U. S. Multiple Spindle Drill Head transforms your single-spindle drill into a multiple spindle.

You can drill two or more holes with the same speeds and feeds you use for drilling one.

Patented double adjustment permits drilling in any pattern. Special heads to order, with adjustable or fixed spindles.

Let us help you reduce your drilling costs

The United States Drill Head Co., 1952 W. Sixth St., CINCINNATI, O.

Michigan Agents—National Sales Engineering Corp., Detroit, Mich.

Walton Tap Extractor Stops Costly Leaks

It's bad enough when a tap breaks—you shouldn't add to the expense by having your men spend a lot of time digging out the pieces.

With a Walton handy it takes only a few moments to get running again. You just slip the fingers of the tool into the flutes of the broken end, give it one or two sharp turns, and the piece is out. No damage to the threads, either. Sizes No. 8 to 1¼".

Shipped on 60 days' approval
Do we hear you say "ship" ?

The Walton Company
Hartford, Conn., U. S. A.

Vanderbeek Universal Joints

—represent the practical refinements of 25 years experience in manufacturing Universal Joints. All parts are generous sized, fully protected against dirt, and are practically self-oiling. Exceptionally strong, they transmit full power up to 70°.

Vanderbeek Joints are in daily use on thousands of machines.

Write today for our Descriptive Catalog.

American Tool Works, Inc.
Hartford, Conn., U. S. A.

High Quality—Right Prices—Good Service

Hollow Bored Forgings and Steel Shafts

Piston Rods
Clutch Shafts
Lathe Spindles
Rams
Steel Pipe
Etc., Etc.

Send blueprints with trial order or for quotation

American Hollow Boring Co.
Erie, Penna.

A RAPID FIRE FILER

Sharp Saws
At 5¢ Each

That is all it costs when RESHARPENED on this machine

SAVES TIME
REDUCES WORK
ADDS EFFICIENCY

That's Why

Amer. Brass have.....19
Continental Fibre.....28
Formica Insulation.....10
and over 100
News,papers use them

The Model J
at a speed of
70 TEETH A MINUTE
sharpens all medium,
soft or spring tempered
CIRCULAR SAWS
up to 18" in diameter
Teeth from as small as 32 to
1" up to ½" spacing.

Write for Catalog

THE WARDWELL MFG. CO.

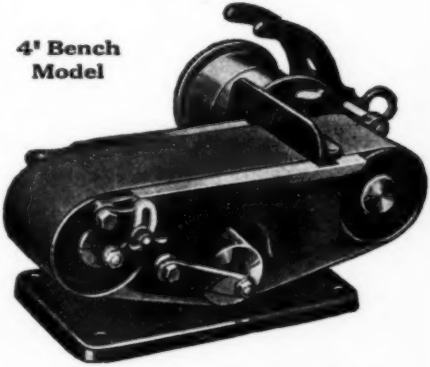
Makers of automatic machines for sharpening—Hack Saws, Hard Tempered Band Saws, Milling, Slitting and Screw Slotting Saws and all Woodworking Saws.

Manufacturers of the largest line of Saw Filers made in U. S. A.

108 Hamilton Ave., CLEVELAND, OHIO

PEERLESS
SURFACING MACHINES
for
Grinding and Finishing
Flat Work

4' Bench Model



Larger Machines in Both Horizontal and Vertical Styles

SEND FOR FOLDER

PEERLESS SURFACING MACHINE CO., Inc.
TROY, N.Y.

Jacobs Chucks

The Adolph Muehlmatt Portabl

Motor Driven Sensitive Drilling M

In the drilling machine family, ranging from the smallest radials, there must be included, of course, sensitive precisio ducing the smallest holes. Such a drill is the "Muehlmatt."

The Muehlmatt No. 1, shown in the illustration, is so super will drill holes down to .010" with great precision, yet it has struction necessary for continuous production work—a valua the tool room, laboratory and assembling department. The larger models, thus covering a wider range of work.

Jacobs Chucks as regular equipment add to their accurac usefulness.

For the complete description and prices, write tod

ADOLPH MUEHLMATT, S. E. Cor. 5th &

This advertisement is interests of good Drillin by the makers of the Jac

Adapt the machi

Jacobs Chucks

Portable

ng Machine

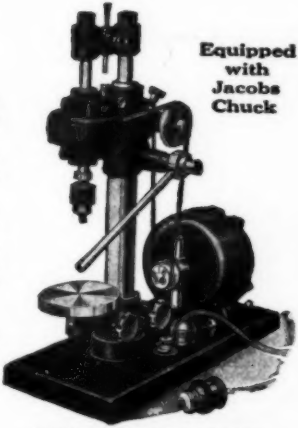
e smallest to the largest
ve precision drills for pro-
luehlmatt."

s so supersensitive that it
yet it has the sturdy con-
k—a valuable addition to
nent. There are also two
k.

eir accuracy and general

write today to—

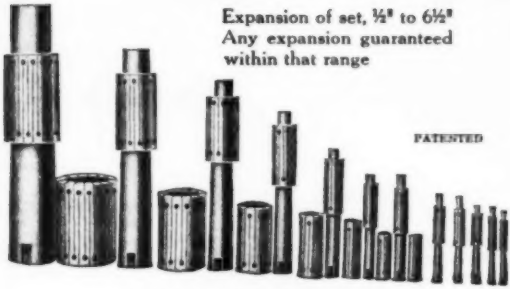
or. 5th & Elm Sts., CINCINNATI, OHIO



Equipped with Jacobs Chuck

nt is published in the
Drilling Equipment
he Jacobs Chuck

machine to your work



ONE SET OF 12

Champion Expanding Mandrels

Will fill by thousandths any inside diameter from ½" to 6½"

The cost is about one-fifth that of solid arbors of equal range graduated by sixteenths.

And they are so simple—only two parts; so handy, always ready for any job; and so efficient.

They are suitable for all classes of work, large or small, in all kinds of metal. They hold work of any length of bore and do not chatter. They are lighter, more easily handled, and keep truer than common mandrels. They release work easily. And the grinding of all parts after hardening insures the greatest accuracy.

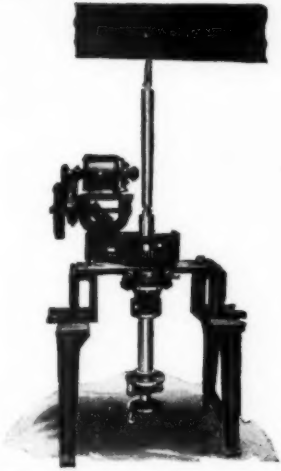
Our Catalog also describes

Champion Tool Holders, Champion Emery Wheel Dressers, Machinists' Vises and Clamps, etc., and our large line of practical, hard-to-beat Shop Furniture. Copy upon request.

The Western Tool & Mfg. Co.

SPRINGFIELD, OHIO

Something New



The Pedrick Boring Unit

This picture of drilling an overhead beam is only an indication of what the Boring Unit can do. It is intended more for other work than for drilling, but to get the whole story, write for a circular.

The Boring Unit removes the limitations from the portable boring bar, and reaches a field of work that otherwise requires the largest machine tools.

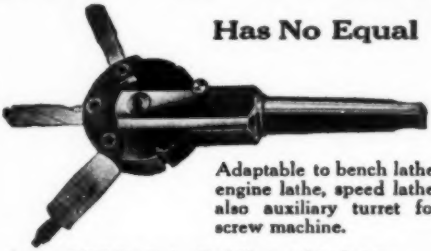
Pedrick Tool & Machine Co.

3644 N. Lawrence St., Philadelphia, Pa.

Builders of Portable Cylinder Boring Bars, Crank Pin Turners, Portable Millers, Pipe Benders, etc.

The M-P Three Tool Turret

Has No Equal



Adaptable to bench lathe, engine lathe, speed lathe, also auxiliary turret for screw machine.

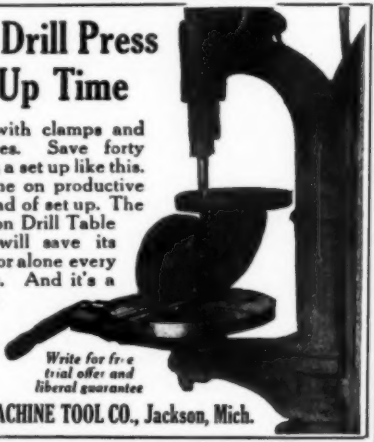
Improved E-Z Set Boring Tool illustrated in last issue.

SEND FOR CIRCULAR

The Maxwell Products Co.

Ottawa & Indiana Ave., Cleveland, Ohio

Saves Drill Press Set Up Time



Do away with clamps and angle plates. Save forty minutes on a set up like this. Use the time on productive work instead of set up. The Combination Drill Table and Vise will save its cost on labor alone every six months. And it's a safety tool.

Write for free trial offer and liberal guarantee

MODERN MACHINE TOOL CO., Jackson, Mich.

Thor Electric Drills—

Admit 50% more cooling air

The vents in the *THOR* are drilled at a tangent to fan blade's motion. They cost more that way than if drilled radially, but they admit 50% more cooling air. This reduces heating and ***increases the safe capacity of motor 25%.***

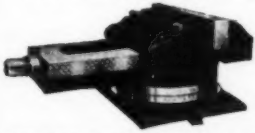
THORS have the speed that cuts labor cost and the durability that cuts operation cost. They are all equipped with a ground wire for safety—shocks are impossible.

Write for new Catalog, describing complete THOR Line

Independent Pneumatic Tool Co.
800 W. Jackson Blvd., Chicago, Ill.

The BARKER GENERAL PURPOSE VISE

For Planers, Shapers, Drilling and Milling Machines



Two Sizes

Width of jaws	11½"—12"
Depth of jaws	2½"— 3"
Jaws open	8" —12"
Weight	180—210 lbs.

Also 16" Mold Makers' Vise

OUR MOLD MAKERS' VISE has 13" width of jaws, 7" depth, and jaws open 16"—weight 290 lbs.

ALL BARKER VISES are made **extra heavy**, with **steel faced jaws**, and are **graduated to swivel any angle.** They stand lots of hard usage.

Get in touch with us before buying

WM. BARKER & CO.
Manufacturer of Machine Tools, COVINGTON, KY.

No Smoke No Fumes

KASENIT

Non-Poisonous Non-Inflammable Non-Explosive

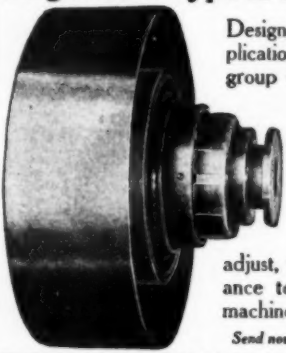
KASENIT No. 1
For Fine Work and Very Rapid Hardening
Sold in ½ lb., 1 lb., 3 lb., 5 lb. and 10 lb. tins

KASENIT No. 2
For General Hardening
Sold in 25 lb. and 50 lb. kegs

Ask your dealer or write for sample can and Booklet

KASENIT COMPANY, 122 Greenwich St., NEW YORK, N. Y.

Edgemont Type E Disc Clutch



Designed for machine applications, high speeds and group drives, but is also adaptable for any other drives where an efficient, powerful clutch is needed. Extremely easy to operate and adjust, with neat appearance to match the best machine tools.

Send now for "Type E" bulletin

THE EDGEMONT MACHINE CO., Dayton, Ohio

LET A POWELL BLOW GUN AIR VALVE—
Blow your Turnings or Borings away

BLO-GUN

AN INTERCHANGEABLE NOZZLE TIP FOR EVERY PURPOSE—

The Wm. Powell Co.
2521-2531 Spring Grove Ave.
CINCINNATI, - - - OHIO

Write!

TOLHURST Chip Wringers reclaim 6 to 15 gallons per load and handle three or four loads an hour!

Tolhurst Machine Works
Troy, New York

HIGH SPEED HAND CUT ROTARY FILES

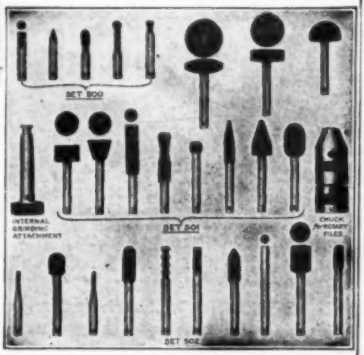
Strand

Rotary Files

Used with Strand Flexible Shaft Machines. Are giving excellent service.

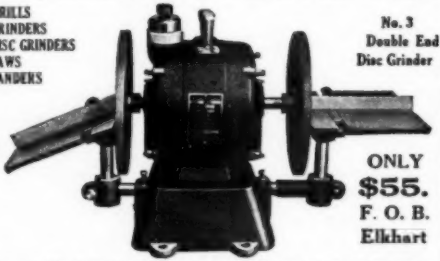
Write for Catalog

N. A. Strand & Co.
5001 No. Lincoln St.
CHICAGO



Winterhoff Motor Driven Portable Tools

DRILLS
GRINDERS
DISC GRINDERS
SAWS
SANDERS



No. 3 Double End Disc Grinder

ONLY $55. F. O. B. Elkhart

Our new No. 3 Portable Motor-Driven Double End Disc Grinder is an unusually profitable machine both for the tool room and for production parts that require a true flat surface. Also made in combination. *Write us today concerning Winterhoff Portable Tools.*

Winterhoff Tool & Machine Co., 109 South Elkhart Ave., ELKHART, IND., U.S.A.

Unsurpassed Sensitiveness—

Built Into Sigourney Drills

OUR SPECIALTY—Sensitive Drill Presses, built for *superior service*. They are speedy, accurate and long lived. Our plain bearing drills have three speeds and are equipped with *clamp stops*, instantly adjustable. Made with 1, 2, 3 and 4 spindles, and are shipped belted, ready for use.

Sigourneys are built with all parts interchangeable, enabling us to give excellent repair parts service. We also build ball bearing machines.

Complete details and prices on request

Sigourney Tool Co.

Hartford, Conn., U. S. A.

Saves Time and Money—

"Utility" Interchangeable Counterbore and Spot Facer

Pilots don't break.

Pilots cannot twist off.

Cutters don't break.

Cutters are easily removed from holders.

Set screws don't come loose.

Cutter drive is simple and powerful.

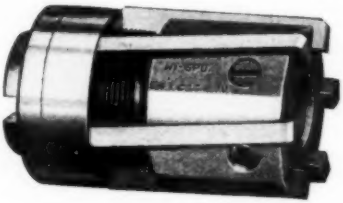
Counterbore and spot facer troubles practically eliminated.

If you're interested in economy, send for the Catalog. You'll be glad you did.

The J. C. Glenzer Company

6469 Epworth Blvd., Detroit, Mich.

"X-L" Adjustable Inserted Spiral Blade Shell and Machine Reamer



Reamers made with Left Hand Angle Cutting Blades do not dig in, and all chatter is eliminated. This means free, clean cutting, smooth holes, and increased production. The range of expansion is from .100" in the smaller sizes to .150" in the larger sizes. Made with High Speed Steel Blades.

This is a real production reamer. The left hand helical flutes cut fast and clean. Made only in high speed steel Made with straight and tapered shanks. All sizes carried in stock.

Catalog on Request

The Schellenbach-Hunt Tool Co.

118 Opera Place, Cincinnati, Ohio

Agents: **Gropler Bros., 105 Hudson St., New York, N. Y.**
E. E. Fletcher, 6007 Euclid Ave., Cleveland, Ohio

Second-Hand Machinery

Lists of Second-Hand Machinery, either For Sale, Wanted or For Exchange, set in uniform style, will be published under this heading at the rate of **50 cents a line**, across the page, each issue, plus **$2.50** for name and address. Minimum charge, **$5.00.** No display permitted in this department.

Write directly to those offering the machines for sale for prices and full descriptions. If what you seek is not listed, use the blank enclosed to make known your wants to the publisher, who will pass them along to all Machine Tool Blue Book advertisers.

Circulation of Machine Tool Blue Book, 25,000.

FOR SALE BY

Wm. Menge, - - Dolgeville, N. Y.

DRILL PRESS

26" Prentice Bros. drill press, with sliding head and power feed. Price, $125.00.

FOR SALE BY

Gallagher Bros., - 435 East Fifth St., Uhrichsville, Ohio

Drill; 20" all geared Barnes. A-1.
Lathe, 20"x8' Hamilton, d. b g., h. s., c. p.

WANTED BY

The Stearns-Roger Manufacturing Co., - Denver, Colorado

GEAR HOBBER.

We are in the market for a 60" to 72" gear hobber. Must be modern. Give full particulars in first letter.

FOR SALE BY

The John B. Morris Foundry Co., - - Cincinnati, Ohio

HOISTS.

In good condition; replaced by heavier equipment.
5-ton Shepard hoist, 220 volt, d. c., hook suspension.
3-ton Shepard hoist, 220 volt, d c., variable speed, hook suspension.
5-ton P. & H. type U hoists, 220 v., d. c., variable speed, lug suspension, (2).

FOR SALE BY

The Philadelphia Drying Mchy. Co., 3351 Stokley St., Philadelphia

FLANGING MACHINE.

Peck, Stow & Wilcox flanging machine, new, with special rolls for flanging bottoms of monel metal ½" thick, 1" high. Capacity for flanging bottoms of 15" to 50" in diameter. Direct motor drive complete, with 2 horse-power, a. c. motor.

FOR SALE BY

J. Bleser Mfg. Co., 16th & Madison Sts., Springfield, Illinois

Lathe engine, 14x6' Monarch, q. c.
Lathe, eng ,15x6 LeBlond tool room.
Lathe, engine, 16x8 G. & K., q. c.
Lathe, 22x10 Bradford, auto. turret.
Lathe, 28x12 Bridgeport.
Lathe, 32x16 Prentiss, l. c. gears.
Miller, Cinti No. 3 univ., O. type.
Miller, Mo 2B K. & T. pl., L. type.
Miller, No. 2 Hendey univ., compl.
Millers, bench. No.3 Burke; Rock'd.
Planer, 22x22x4' Pond.
Press, arch, No. 3A Walsh, 3" str.
Press, No. 31 Swaine, o.b.i., 1½" str.
Shaper, crank, 16" Barker.

FOR SALE BY

Foster Machinery Company, 10203 Quincy Ave., Cleveland, O.

Angle shear, No. 2 Cleveland, 4x4x½" angle.
Boring mill, vertical. 42" Bullard.
Grinder, No. 60 Heald, cylinder.
Grinder, General tool & cutter.
Grinder stand, Western No. 4, two 14" wheels.
Lathe, 16"x6' Monarch.
Lathe, 18"x8' Lodge & Shipley.
Miller, No. 00 Brown & S., hand.
Miller, No. 00 Owen, Fox type.
Planer, 26"x26"x8' Gray.
Press, No. 3 Stiles.
Riveter, High Speed No. 3-A, heavy duty.
Riveter, Hanna, 24" throat, 15" gap, ⅝" rivet.
Rolls, bending, 6'x⅜" H. & J.
Shear, 11'x16 ga. Streine.
Shear, alligator, Canton, cap. 1¼' sq.
Shear, slitting, 36"x18" gap, foot.
Squaring shears, No. 210-A Pexto, power.
Trolleys, I-beam, 1 & 2 ton.

FOR SALE BY

Wm. C. Johnson & Sons Machinery Co.,

1211-1223 N. 12th St., St. Louis, Mo.

PLANERS.

24"x24"x 6' Powell.
32"x32"x10' Cincinnati, 2 heads.
36"x36"x10' Flather, 2 heads.
42"x42"x16' Powell, 3 heads.
48"x48"x14' Gray, 2 heads.

MILLING MACHINES

No. 1½ Rockford plain.
No. 1½ Brown & Sharpe.
No. 1 Knight vertical.
No. 3 Oesterlein plain.
No. 3 Cincinnati plain.
No. 12 Kempsmith.
No 25 Becker.
Owen duplex.

LATHES.

10"x 5' Star bench.
15"x 6' Monarch. q. c. g.
15"x 7' Ca roll Jamieson.
17"x 7' Oliver heavy duty.
20"x10' Rahn & Mayer.
20"x10' Lodge & Shipley, q. c. g.
26"x12' Putnam
29"x24' LeBlond, q. c. g.
32"x16' F. E. Reed.
44"x24' Pond, triple geared.

DRILLING MACHINES.

3' arm Canedy-Otto post drill.
24" Aurora, sliding head.
22" W. F & John Barnes.
20" Champion.
6' arm Bickford radial.
4 spindle Henry & Wright.
4-spindle Allen.

GRINDERS.

No. 60 Heald, cylinder.
30"x84" Diamond face.
No. 1 Fraser surface.
8"x18" Ott.
Schmidt auto. cylinder.
No. 50 Gardner, disc.
No. 16 Brown & Sharpe plain.
8" Heald rotary, magnetic chuck.
Washburn twist drill grinder.

PRECISION TOOLS.

No. 3½—7" swing Stark bench lathes.
No. 4½—9" swing Stark bench lathes.
No. 3 Langelier swaging machine.
No. 1 Dayton swaging machine.

MISCELLANEOUS.

Acetylene generator, 100 cu. ft. cap.
Air compressors, (14).
Bolt cutter, 1" Landis.
Belt lacers, 9" & 12" Peerless.
Boring mche., hor., No. 2 P. & H.
Boring mill, 42" Bullard.
Buffing lathe, 5 h. p. Reliance, motor driven, 3 ph., 60 cy., 220 v.
Bulldozer, 75 ton Lourie hydraulic.
Eye bender, No. 2 Williams-White.
Gear hobber, 84" Schuchardt & S.
Gear hobber, No. 1 Schuchardt & S.
Gear hobber, No 1 Farwell-Adams.
Hammer, No 2-A High Speed
Keyseater, No. 2 Mitts & Merrill.
Post hammer, Pettingell.
Punch, No 7 Long & A., 4" throat.
Punch and shear, ⅝ in ⅜".
Riveter, Shuster, model A, ⅜".
Screw machine, 3"x26" Jones & L.
Screw machine, 2"x24" Jones & L.
Screw mche ,No.1½ Smuir & Kamen.
Screw machines, No. Pratt & W.
Sq. shear, 62", 18" gap, No. 10 ga.
Taper rolling mche., No. 2 Hess.
Tapping machine, No. 1 Garvin.
Tilted turret lathes, Nos. 2, 3 & 4.
Turret machine, 2½" Greenlee.
Wheel press, 90"—300 ton.

FOR SALE BY

A. F. Strafer, . . . 30 Church St., New York City

BORING MILLS, VERTICAL.

10′—16′ Niles extension type, b. d.
14′—20′ Betts, extension type.
42″ Bullard, belt drive.
90″ Niles, friction feed, b. d.
72″ Niles Bement-Pond, heavy.
60″ Baush, heavy, quick change fds., 10 h. p., d. c. motor drive.

BORING MILLS, HORIZONTAL.

8″ Bar, No. 6 Barrett cyl. boring.
6″ bar, Bement Miles, floor type.
5″ bar, Sellers, floor type.
6″ bar, Barrett horizontal cylinder.
3½″ bar Bement, 48″ feed.

DRILL PRESSES.

7′ Baush tapping attach., box table.
6½′ Pond, heavy, belt drive.
6′ Reed Prentice, latest type, m. d.
6′ N.-B.-P. semi universal, m. d.
5′ Pond, heavy, belt drive.
3′ Carlton, radial, belt driven.
No. 310 Baker, high duty, cap. 2½″.
26″ Kern, double b. g., s. h.
6-spindle, 20″ Barnes gang drill.
Avey ball bearing, bench type.

GEAR CUTTERS.

72″ Brown & Sharpe automatic.
No. 4 Brown & Sharpe automatic.
Gould & E. 24″—36″ spur and bevel.
No. 2½ Bilton automatic gear cutter.

GRINDERS.

18″x96″ Norton pl., arr. for motor dr.
10″x72″ Norton plain, overhead, belt drive, complete equip.
6″x32″ Norton plain.
20″x120″ Landis.
No. 11 Brown & S. plain, 6″x32″.
No. 1 Landis universal, belt drive.
Face grinder, Bridgeport 36″x8′.

HAMMERS.

7000 lb. Bement, d. f. forging.
3000 lb. steam forging, dbl. frame.
1500 lb. N-B P steam hammer.
1400 lb. Chambersburg steam.
1200 lb. Chambersburg, s. f. steam.
600 lb. Erie steam hammer.
500 lb. Bradley upright helve.
75 lb. Bradley upright compact.
No. 4 type "B" Nazel motor drive.
No. 4-B Nazel hammer, motor drive.
No. 3-B Nazel, arranged motor dr.
500 lb Standard, automatic drop.

TURRET LATHES.

Gisholt 24″ modern, motor drive.
B. & O., 4½″ cap., bar equipment.
Jones & Lamson, 3½″x36″ bar equip.
Greenler 2½″x26″, chuck equip.
Steinle 24″, new.
Bardons & O., No. 4, wire feed.

ENGINE LATHES.

52″x24′ Putnam, triple grd., belt dr.
42″x42′ Fitchburg, triple grd., b. d.
42″x21′ N.-B.-P., triple grd., b. d.
36″x16′ N.-B.-P., new, triple geared.
36″x14′ Schumacher & Boye, q. c.
36″x23′ Fitchburg taper att., belt dr.
30″x20′ Fitchburg, belt drive.
28″x14′ Boye & Emmes, q. c.
27″x12′ Lodge & Shipley, q. c.
24″x12′ Prentice, geared head.
21″x 8′ R. K. LeBlond, heavy duty.
17″ and 19″x8′ LeBlond, h. d., q. c.

MILLING MACHINES.

No. 4 Cincinnati plain, cone type.
No. 3-B Brown & S. hvy, plain.
No. 2-Y Brown & Sharpe, plain.
No. 2-B Brown & Sharpe, heavy.
Mfg type, B. & S heavy No. 13.
Newton slab, 42″x15′ table.

PLANERS.

Niles-Bement-Pond modern electric rev. drive planers, sizes:
60″x60″x36′ Pond, rev. m. d.
60″x60″x14′ Pond, rev. m. d.
48″x16′ heavy.
50—36″x22′ widened.
42″x28′—42″x30′ heavy.
36″x36″x14′ G. A. Gray, 2 hd., b. d.
36″x36″x 8′ G. A. Gray, 2 hd., b. d.
36″x26′—16′ and 14′ heavy.
120″x144″x25′ Sellers
120″x120″x25′ Niles, motor drive
72″x72″x30′ Sellers.
48″x48″x16′ Woodward-Powell, 4 hds.
30″x 8′ D. & H. openside.

PUNCHES AND SHEARS.

Alligator, No. 4 Doelger & K., 5″ cap.
No. 17 Williams & White, 34″ tht.
No. 6 Hilles & Jones, 72″ thrt, m.d.
No. 4 H. & J., dbl., 48″ thr., m. d.
Bar shear, L. & S. No. C, cap. 3″ r.
Angle shear, H & J, 6″x1″ cap.
Rotary, Gray No. 1—3/16″ cap.
Rotary, No. 6 Quickwork, ⅜″ cap.

ROLLS.

20″ Hilles & Jones, cap. ⅜″ plate.
10″ Southwork, cap. 1½″ plate.
7′ Sellers, cap. ⅜″ plate.
Straightening, H. & J. 4′ and 6′.

FOR SALE BY

Brown Machinery Co., - - 2323 N. 9th St., St. Louis, Mo.

Buffing lathe, Hisey 3 h. p. electric, a. c., 3 phase, 60 cycle, 220 volts.....$ 100.
Buffing lathe, U. S 3 h. p electric, a. c., 3 phase, 60 cycle, 220 volts .... 125.
Drill, 24" Aurora, sliding head, tapping attachment..... 275.
Drill, Bush No. 3 multiple, cap. 30 spdls., rectangular bd. 20x40". Price 1500.
Drill, radial, horizontal, No. 1 Barnes, double end..... 300.
Grinder, cylinder, No. 60 Heald..... 850.
Grinder, No. 14 Gardner, b. b., disk, dry, 20" disks, good cond. Price 400.
Grinder, No. 6 Besly two-spindle disk, 20" disks. Price..... 300.
Grinder, No. 1 Brown & Sharpe universal, 10x24; good condition. Price 375.
Grinders, emery, St Louis and Western, 100 new at 50% discount.
Hammer, size A United, motor driven..... 350.
Lathes, 16"x8' Monarch, heavy duty, each..... 400.
Lathe, 20"x8' Reed..... 300.
Lathe, turret, No. 4 Wood tilted, g. f. h , power feed, new ..... 650.
Miller, No. 1½ American universal, new.
Miller, No. 1B Fox, hand & pwr. fd., 18x6x14; new, never used. Price. 350.
Motors, (40); 1 to 40 h. p., 3 phase, 60 cycle.
Planer, 60"x60"x20' Niles, 3 heads.
Polishers and buffers, drop head, New Britain, each..... 50.
Press, geared, No. 5 Stiles & Parker, weight about 9000 lbs ..... 550.
Shear, Marshalltown No. 134 rotary splitting, cap. ¼" plate; 4' throat; arranged for motor drive. Like new. Price..... 600.

FOR SALE BY

Fitzsimmons & Cole Machinery Company

1208 House Building, - - - Pittsburgh, Pa.

Air compressor, Ingersoll 10x10, 150'.
Blower, No. 6 Buffalo cupola, b. d.
Bolt cutters, 1½", 2", 2½", 4" Landis.
Boring mill, 42" Bullard, b. d.
Boring mill, 96" Niles, m. d.
Bulldozer, No. 25 W. & W., m. d.
Drill, radial, 6' Prentice, s. p. d.
Drill, 14" Hamilton upright, b d.
Drill, 24" Cinti upright, sliding hd.
Drill, 38" Prentice upright, slid. hd.
Flanger, McCabe, ¾" capacity.
Gear planer, 24" Gleason, bevel, b. d.
Gear planer, 48" Gleason, bevel, b d.
Grinder, dbl. emery, wheels 18" dia.
Grinder, 16"x48" Landis, crankshaft.
Grinder, 16"x68" Landis, crankshaft.
Grinder, 16"x52" Landis, plain.
Grinder, No. 16 Blanchard.
Hammer, 50 lb. Mayer, upright.
Hammer, 200 lb. Beaudry, upright.
Hammers, 2-B, 3-B, 4-B & 4-N Nazel.
Keyseater, No. 1 Catlin.
Lathe, 16"x6' American, q. c. g., t.a.
Lathe, 42"x34' Pond, l. c. g., t a.
Lathe, crankshaft, 30"x14' L. & S.
Lathe, turret, 5"x30" Bardons & O.
Lathe, wheel, 42" Niles, double end.
Miller, univ., Oesterlein, 25½x7½x10".
Miller, slab, 24x70x14' Ingersoll.
Pipe machine, 12" Jarecki, b. d.
Planer, 36"x36"x24' Pond, 4 hds, b. d.
Planer, 48"x48"x14' Pond, 4 hds , b d.
Planer, 96"x96"x20' Pond, 4 hds., m d.
Planer, o. s., Cleveland, 36"x36"x16'.
Planer, o. s , Cleveland, 48"x48"x12'.
Planer, o. s. Cleveland 48"x48"x20'.
Press, baling hyd. No. 23-P Logemann
Press, Ferracute P-1, 1½" stroke.
Press, No. 37½ Bliss, s. s., 6" stroke.
Press, toggle, No. 1½ Bliss.
Punch, hor., Cleveland, 1" thru 1".
Punch, multiple, No. 5 H. & J., 10'.
Punch & shear, 30" throat, ¾" thru ¼".
Punch & s., Pels, type RBLUEF-36.
Riveter, Hanna, 18" thrt., 15" gap.
Riveter, Allen, 66" throat, 15" gap.
Riveter, stake, No. 6 Whiting, 48" thrt.
Rolls, angle bending, 6x6x¾" K. & R.
Rolls, bending, 48"x¼".
Rolls, bending, 8'x¾" N -B -P.
Sand blast, MacLeod, 36"x36".
Saw, cold, 24" Higley.
Shaper, 16" Gould & Eberhardt, b.d.
Shaper, 20" Cincinnati, b. g., b. d.
Shaper, 24" Gould & Eberhardt, b.d.
Shear, angle, L. & A., cap. 8"x8"x1¼".
Shear, alligator, United, cap. 1½" sq.
Shear, bevel, Lenox ¼".
Shear, guil., No. 3 H. & J., cap 2½" sq.
Shear, rot., No. 110½ Bliss 3/16" cap.
Shear, rotary, No. 6 Quickwork, ¼".
Shear, rotary, No. 3 Quickwork, ¼".
Shear, 10'x¼" Cincinnati, m. d.
Shear, 6'x¼" United, b. d.
Shear, 54"x¾" Cincinnati, m. d.
Shear, 36"x3/16" Cincinnati, m. d.
Straightener, bar, No. 3 K. & R.
Straightener, beam, No 4 H & J.
Straightening rolls, United, cap 26 ga.
Testing machine, 100,000 lbs. Riehle.

FOR SALE BY

Chas. Molitor Machinery Co., 118-124 S. Clinton St., Chicago, Ill.

LATHES.

28"x14' Schumacher-Boye, q. c. g.
24"x12' American, q. c. g., ind. turret.
24"x10' Lodge & Shipley, grd hd.
20"x12' Hendey, taper attachment.
20"x 8' Advance, q. c. g.
18"x 9' Hamilton, q.c.g., taper, draw, collet attachment.
18"x 8' Boye & Emmes, q. c. g., taper, draw, collet attachment.
18"x 9' Chard, q. c. g., taper, draw, collet attachment.
18"x 8' LeBlond, q.c. g., taper, draw.
18"x 8' Sidney, quick change grs.
18"x 8' Morris, q. c. g., dbl. g., (2).
16"x 8' Pratt & Whitney, q. c. g., taper, relieving attachment.
16"x 8' Cincinnati q. c. g.
15"x 6' Carroll-Jamieson.
14"x 6' Hendey, draw att., (4).
12"x 5' Davis.
10"x 5' Monarch, q. c. g.
10"x 5' South Bend, motor attach.
¾" & 1" Hardinge precision (2).

MILLERS.

24" Bullard vert. rapid production.
Nos. 1 & 2 Brown & Sharpe univ.
No. 2 Kempsmith universal.
No. 2 Cincinnati plain.
Nos. 3, 5, 5B Becker vertical.
No. 4 Ohio rapid production.
No. 4 Cincinnati vert., single pulley.
24" Bullard vertical turret.
24" Colburn vertical.
No. 25 Becker plain, (6).
No. 3 Kempsmith, gr. box fd., plain.
Gooley & Edlund, production.
No. 6 Transit, production.
2½" Twin spline miller, P. & W.

SHAPERS.

24" Stockbridge, sgl. pul. drive, b.g.
21" Smith-Mills, sgl. pul. drive, b. g.
18" Gould & Eberhardt, b. g.
16" Rockford, back geared.
16" Smith-Mills, arr. for motor dr.
16" Smith & Mills, b. g.

DRILL PRESSES.

42" W. F. Barnes, sliding head.
24" Baker Bros. heavy duty, (3).
24", 26" Aurora, Cincinnati, etc.
22" Niles, single pulley, tapping att.
Sipp, with comp. tilting table, (2).
1-spindle Sipp, ⅞" cap. (4).
2-spindle Henry & Wright, 1" cap.
1, 2, 3 & 4 spindle Avey, No. 2 hi. sp.
3-spindle Leland G., ⅞" cap., bench.
Large variety 14", 16", 20" & 24".

GRINDERS.

Bryant internal and chucking, (6).
Cincinnati universal, 4"x57" table.
No. 2 Oakley universal.
No. 2 LaSalle surface, magn. chuck.
No. 1 & No. 2 Norton universal.
10"x30" Norton cylindrical.
12"x72" Brown & Sharpe cylindrical.
No. 4 Gardner ball bear., 24" disc, (5).
30" and 40" Besly and Gardner, disc.
No. 65 Heald cylinder
No. 120 Gardner, ball bearing.
No. 6 Gardner, chuck & disc, 20x42" table, long. and cross feed.
Cincinnati No. 1 universal.

SCREW MACHINES AND TURRET LATHES.

Jones & Lamson, single spindle.
No. 00, No. 0, No. 2 B. & S. auto.
No. 00, No. 0, No. 2 B. & S. former.
Nos. 00, 1, & 4 B. & S. semi-auto.
Nos. 2 & 4 Warner & S. pl. & g.
No. 6 Foster, power long. & cross.
1" & 1¼" cap. Acme, b. g., frict. h.
14" Gisholt, motor drive.
Nos. 0, 1, 2, 3 Foster and B. & O.
⅝", ¾" Cleveland auto.
16"—18" Fox turret lathes, fric. hd.

PUNCH PRESSES AND SHEARS.

100-ton Lourie hydraulic.
No. 33P Toledo.
No. 920 Toledo double crank.
No. 3 Rockford, inclined flywheel.
No. 3 Black & Johnson.
Emco bench type, (10).
No. 71 Toledo double crank.
No. 4 Bliss-Stiles, geared notching.
No. 5 Bliss-Stiles, geared.
⅜" capacity slitting shear.

MISCELLANEOUS.

Bolt cutter, 1" Landis.
Bolt cutters, ½" Geometric (2).
Bolt cutter, ½" Acme, double head.
Broaching machine, No. 1 LaPointe.
Centering mchs., single and double.
Gear cutter, No. 13 B & S., bevel & s.
Gear cutters, Waltham auto., (4).
Keyseaters, Nos. 1 & 2 Davis.
Pipe cutter, 3" Hoe & Son.
Reducing or straightening rolls, 6"x36" Bliss.
Reducing rolls, 11"x22", dbl. gears, Toledo.
Steel corrugating rolls, 7"x26".

FOR SALE BY

McDonald Machinery Co., 1531-33 N. Broadway, St. Louis, Mo.

Clock, electric time system.
Demagnetizer, Walker.
Drills, Baker and Rockford heavy duty.
Drills, Leland-Gifford 2 and 3 spindle, h. s., b. b.
Drill, Detroit 8-spindle horizontal.
Drill, Gardam 12-spdl. adjustable.
Drills, Demco, H. & W., Kokomo 1-spdl., Sipp 1 & 2 spdl., h. s., b. b.
Drills, 20", 24", 34" b. g., & tapping.
Furnace, Holcroft 92 k. w. annealing.
Gear hobbers, Schuchardt & S. 24".
Gear shaper, Fellows 36".
Grinder, Heald No. 60 cylinder.
Grinders, P. & W. 14" vertical surface; Ott 5"x18"; Landis 12"x48".
Hack saws, 4x4, 6x6 & 6 Racine Jrs.
Lathes, Davis 22"x10"; Bridgeford 27x9, Star 12x5, mtr.; L. & S. 16"x6'.
Punches, Wetterhahn 18", throat $\frac{3}{4}$" in $\frac{1}{2}$"; Long & A. No. 6, $\frac{3}{4}$" in $\frac{1}{2}$".
Punch presses, Bliss Nos. 18 & 20; Toledo No. 1; Niagara No. 6, o. b. i.
Rivet spinners, Grant 3/16" and $\frac{1}{4}$".
Milling machines, Kempsmith No. 2; Ohio No. 20 plain; Becker No. 6 vertical; Becker "SD" vertical, rotary table, 17200 lbs.; Cin'ti No. 3 pl.; American No. 1$\frac{1}{2}$ univ.; B. & S. No. 1 pl., B. & S. $1\frac{1}{2}$, with dividing hd.; Ohio 34; LeBlond No. 3-H pl.
Screw machine, Gridley 1-spdl. $2\frac{1}{2}$" auto.; Cleveland $1\frac{1}{2}$" auto.; P. & W. No. $2\frac{1}{2}$ hand; Foster No. 3 hand; Woods No. 2 tilted turret head; Bardons & Oliver No. 7.
Shapers, 15" Kelly; 24" Walcott; 16" Steptoe; 24" Barker; 14" Steptoe.
Shears, 60" thrt. rotary slitting, (2).
Tapping mche., Garvin Nos. 2 and 2-BG auto.
Welders, 20 k. w. spot, Winfield.
Welders, butt, Federal, $\frac{3}{4}$" rds.

FOR SALE BY

Jones Machine Tool Co., Front & Pike Sts., Cincinnati, O.

LATHES.

16"x 6' LeBlond, q. c. g.
16"x 8' Hendey, q. c. g. & t. a.
18"x10' Reed Prentice, grd head.
20"x10' Lodge & Shipley, q. c. g.
20"x 8' American, q. c. g.
26"x12' Reed, l. c., t. a.
30"x12' Houston Stam., q. c. g.
30"x16' Lodge & Davis.

MILLING MACHINES.

No. $1\frac{1}{2}$ Valley City universal.
No. 3 Cincinnati plain.
No. 4 Cincinnati plain.
No. 5 LeBlond plain, s. p. drive.
No. $1\frac{1}{2}$ American plain.
No. 3 Brown & Sharpe plain, (2).
No 3 LeBlond plain.
No. 3 B. & S vert., s. p. drive.

RADIALS AND DRILL PRESSES.

$3\frac{1}{2}$' Fosdick radial, s. p. drive.
72" Niles, cone drive.
72" Dreses, motor drive.
22" Cincinnati b. g., power feed, tapping attachment.
24" Hoefer, stationary head.
24" Rockford, sliding head.
30" Cincinnati, sliding head, t. a.
42" Bickford, stationary head.

PUNCH PRESSES AND SHEARS.

No. 2 Niagara.
No. 3 A Willard, o. b inclinable.
No. 3 Robinson, o. b. i. inclinable.
No. 2 Swaine blanking press.
No. 6 Whiting, single end.
No. 4 Bliss.
No. 85 Bliss, d. b. g.
No. 66 Consolidated press.

PLANERS AND SHAPERS.

24"x 6' Powell 1 head.
30"x 6' Gray, 2 heads.
48"x36"x12' Cincinnati, 2 heads.
16" Smith & Mills shaper.
25" Smith & Mills, b. g.
24" Kelley.

MISCELLANEOUS

Bolt cutters, 1" & 2" Acme.
Boring mill, 42" Bullard.
Boring mill, 10' Niles.
Chain hoists, various sizes, (50).
Gear hobber, 24" S. & S
Gear hobber, Barber-C. No. 12.
Grinder, 10x50 Norton.
Grinder, No. 6 Besly disc.
Grinders, No. 60 Heald, cyl., (3).
Grinder, No. 70 Heald, chucking.
Hammer, steam, 800 lb. Niles.
Millers, hand, (6).
Slotter, 16" Niles vertical.
Square shear, 62" Robinson 12 ga.

SPECIAL.

Ten 50-ton Lucas standard power forcing presses, each $360.

Write for our latest Stock List.

FOR SALE BY

Marr-Galbreath Machinery Co., 58 Water St., Pittsburgh, Pa.

Air compressor 4"x5" Caldwell, 2 cyl.
Angle & bar bender, No. 9 Buffalo.
Angle rolls, K. & R., 6x6x¾".
Arbor presses, Nos. 00 & 1 Atlas (5).
Blowers, pos. pressure, 5" outlet.
Bolt cutters, 1", 1½", 2", 3" & 4.
Bolt cutter, 1½" Reliance, dbl. head.
Bolt cutter, 1½" Acme, 3-s. indle.
Bolt cutter, 2" Landis, 1-spindle.
Boring mills, Rockford, 2" & 3" bar.
Brake, 8'x20 ga. Robinson, hand.
Brake or press, 10' Robinson, toggle.
Bulldozers, Nos. 4, 5 & 7 W. W.
Bulldozer, No. 7 Ajax.
Comp'r, 2500 cu ft. L. D.G., a. c. mtr.
Crane, 40-ton Morgan, 67' span, 4 motors, 220 volts, d. c., new.
Cutting- ff mch., 6" Newton, int m. d.
Drills, rad. h., 3' & 6' Western, m. d.
Drill, radial, 5' Prentice, t. a., m. d.
Drill, radial, 4' American, gear box.
Drills, radial, 4' Bickford.
Drill, 8-sp. Baush, rd. hd., belted.
Drill, heavy gang, 4-sp., 12' table.
Drill, 20" Stiver, b. g., fig. 62.
Drill, 22" Aurora upright.
Drill, 24" Aurora, sliding head.
Drill, 24" Barnes, b. g.
Drill, 30" Barnes, sliding hd., b. g.
Exhausters, No. 8 Buffalo.
Forging mch., 1½" Acme, iron bed.
Forging machine, 3" Acme, steel bed.
Gear cutter, No. 6 B. & S., cap. 72".
Gear cutter, No. 11 universal Dwight
Gear cutter, No. 3 S. & C., auto. 1x1".
Gear hobber, No. 4 Farwell, A-1.
Generator, 100 k.w., 240 v., d. c., connected to horiz. steam engine.
Generator, 65 k. w., 240 v., d. c., connected to horiz. steam engine.
Grinder, No. 60 Heald internal.
Grinders, No. 1 Cincinnati universal, cutter and tool.
Grinder, 20" Taylor & Fenn, wet tool.
Grinder, Yankee drill, style A.
Grinder, No. 1 W. & M., surface.
Hack saw, Acme, 18" blade.
Hammer, 100 lb., single fr., steam.
Hammer, 2000 lb. Erie, single frame.
Hammers, 40, 80 lbs. Bradley.
Hammer, 125 lb. Bradley upr. strap.
Hoist, pneumatic, Curtis.
Keyseater, 24" Morton, cap. 2½".
Lathe, 42"x32' Am., g'd. hd., m. d.
Lathe, 38"x16' New Haven, rag. blks.
Lathe, 24"x10' Pgh., q. c. g., t. a.
Lathe, 24"x10' S. & B., q. c. g.
Lathe, 20"x10' Rahn-L., q. c. g., t. a.
Lathe, 20"x8' Am. t. a., g. h., for m d.
Lathe, 18"x12' L. & S., q. c. g., t. a.
Lathe, 18"x 8' Lodge-S., g. h., pan.
Lathe, 16"x8' Bradford, pl. change.
Lathe, 16"x6' Flather, taper att., ch.
Lathe, 15"x6' South Bend.
Lathe, 14"x6' Monarch, plain change.
Lathe, 12"x8' Reed-P., g. h., s. p. d.
Lathe, 13"x6' South Bend, m. d.
Lathe, speed, 11"x4' Prentiss, t-rest.
Miller, No. 3½ Fox, hand, 24"x6"x14½".
Miller, No. 0½ Cin. pl., 18"x6"x15".
Miller, No. 3 Lelland, pl. ind. hd.
Miller, Hendey Lincoln No. 2½.
Miller, Knight duplex, tbl. 8½"x32".
Miller, No. 0 Kempsmith universal.
Miller, vertical No. 0 & 1 Bickett.
Miller, vertical, Becker "C".
Miller, bench, No. 3 Burke.
Millers, hand, Whitney, (2).
Motors, ½ h. p., 220 volts, d. c., 450/1800 rev., (2).
Pipe machines, 8", 6", 2" Oster.
Pipe machine, 6" Jarecki, s. p. d.
Planer, openside 42"x42"x16', 3 hds.
Planer, Powell, 42"x42"x16', 4 hds.
Planer, 24"x24"x 5' New H., 1 hd.
Press, No. 20 Bliss, o. b. i. plain.
Press, No. 18 Bliss, o. b. i. plain.
Press, No. 1 Toledo, o. b. i., for mtr.
Press, No. 2 V. K. & V., 2300 lbs.
Press, No. 10 Bliss o. b. i., bench.
Press, No. 11 Perkins, pl. trim., 4" str.
Press, No. 59 Toledo, side shear.
Press, No. 82 Consolidated horning.
Presses, foot, kick, (6).
Punches, Nos. 51 & 55 Beloit.
Punch & sh., "C" Cleve., 12" thrt. a. j.
Punch, No. 124-A Niagara, 15" t., ½x½".
Punch & shear, No. 2 Long & Allstatter, 30" throat, a. j.
Riveter, ½" Shuster, style A.
Riveter, 80-A Giant, cap. ½".
Riveter, Allen, jaw, 36x20x1½" rivets.
Riveters, 5-A High Speed.
Saw, Burke, 12" blade.
Saw, cold, No. 18 Wagner, 16" saw.
Saw, cold, No. 11½ Higley, 14" saw.
Screw machine, No. 2 P. & W., p. f.
Shaper, 24" Stockbridge, rebuilt.
Shapers, 24" G. & E., old style, good.
Shaper, 16" Cincinnati, b. g. crank.
Shaper, 15" Potter & J., m. d.
Shear, single end, 9" throat, cap. 3½" round, motor drive, new.
Shear, Quickwork, Nos. 3 & 6 m. d.
Shear, Niagara 16-A ring & circle.
Shear, squaring, 53"x18 ga.
Shear, square, 10'x10 ga., m. d.
Straightener, No. 2 Kane & Roach.
Testing mchs., 100,000, 200 000 lbs.
Tumbl'g barrel, Globe, 18"x15", new.
Turret, 24" Gisholt, 6½" h. s., t. a.
Turret, 28" Gisholt, t. a.
Turret, vert. 30" Bullard & Colburn.
Turret lathe, 2x24" J. & L.
Turret lathe, No. 1 Bardons & O.
Turret lathe, 28" Gisholt, t. a., 250.
Turret lathe, 18" B. & O., fr. hd.
Turret lathe, P. & W. bench.
Upsetter, 3" Acme, steel bed, A-1.
Valve tapper, 4" Pottstown, 3-w., m. d.

FOR SALE BY

Nelson Machinery Co., 123-131 N. Pearl St., Green Bay, Wis.

Bending rolls. 8', ¼" capacity.
Buffing stand. No. 4 Gardner, b. b.
Keyseater, Davis No. 2.
Lathe, 36"x18' Niles-Bement-Pond.
Milling mche., No. 2 Garvin univ.
Planer, 30"x30"x14' Betts, single hd.
Press, No. 4 Rudolphi & K., o. b. i.
Punch press, No. 3A R. & K., o.b.i.
Punch & shear, No. 3 Royersford, double end.
Punch & shear. Rock River, single end, 18" throat.
Screw machine, No. 2C Pratt & & Whitney, hand.
Shaper, 24" Milwaukee, crank.
Squaring shr., 30" Kutscheid No. 2.

FOR SALE BY

Hill, Clarke & Co., Inc., - 156 Oliver St., Boston 9, Mass.

PLANERS.

17"x4' Whitcomb Mfg. Co.
22"x22"x5' Putnam.
22"x22"x5' Powell.

DRILLING MACHINES

Aurora 24", sliding head, b. g.
4' American, plain radial.

GRINDERS

No. 1 Diamond, wet tool.
29" Taylor & Fenn, wet tool.
No. 12 Modern plain.
6"x30" Atlas M. T. Co., plain.

MILLING MACHINES

Milwaukee No. 3-B plain, single overarm.
Becker No. 5B vertical.
Becker No. 8 duplex.

MISCELLANEOUS.

Boring mill, 59" Niles vertical, two swivel heads, late model, like new.
Brake, hand, Peck, Stow & Wilcox 8', cap. 18 gauge.
Broaching machine, Lapointe Machine Tool Co. No. 1.
Cutting-off saws, J.T. Burr No.1(2).
Broaching machine, Lapointe Machine Tool Co., No. 3.
Hammer, steam, 500 lb. David Bell & Son.
Shear, New Doty No. 7-B.
Shear, alligator, Canton Foundry & Machine Co. No. 2.

FOR SALE BY

Miles Machinery Co., - - - Saginaw, W. S., Mich.

Broach, LaPointe (Hudson) No. 2 ..... $250.
Bucket, 1 yd. Industrial clamshell ..... 350.
Compressors, 8"x8" Curtis vertical duplex ..... 300.
Die casting machines, No. 2 Victor ..... 200.
Drill, 20" Lingren, all geared, power feed ..... 150.
Drill, 25" W F. & John Barnes, back geared, power feed ..... 150.
Drill, 26" Reed Prentice all geared ..... 300.
Drill, 2 spindle Henry & Wright ball bearing sensitive 225
Filing machine, No. 2 Cochrane Bly ..... 150.
Generators, acetylene. 100 and 200 cu. ft ..... $200 & 300.
Grinder, No. 2 Landis universal, capacity 12"x32" ..... 550.
Grinder, drill, New Yankee, ⅛" to 2½" ..... 75.
Gear hobbers, 12", 18" & 24", 36" Gould & Eberhardt ..... cheap.
Hoist, ½ ton Yale electric 220 volt, 60 cycle, 3 phase ..... $180.
Jointer, 16" Porter ..... 275.
Lathe, turret, No. 2 Foster, friction b. g. head, pump, pan, etc ..... 225.
Lathe, Dalton bench, taper attachment draw in bar, equipment ..... 100.
Lathe, 14"x6' Monarch, l. c. g., hollow spindle ..... 225.
Lathe, 15"x6' Carroll-Jamieson, q. c. g., b. g ..... 260.
Lathe, 16"x6' South Bend, l. c. g., b. g ..... 275.
Lathe, 17"x8' Sidney, q. c. g., d. b g ..... 475.
Lathe, 20"x8' Walcott q. c. g., d. b. g ..... 550.
Miller, plain. No. 1½ Grand Rapids ..... 400.
Miller, universal. No. 1 Cincinnati ..... 125.
Punch press. No. 3½ Stiles ..... 150.

FOR SALE BY

The Strong, Carlisle & Hammond Co., Cleveland, O., Detroit, Mich.

ENGINE LATHES.

14"x 6' LeBlond, l. c. g. and chuck.
14"x 6' Hamilton.
14"x 6' Bradford, c. r., q. c. g.
14"x 6' Porter, compound rest and taper attachment, l. c. g.
16"x 8' South Bend, compound rest, complete.
16"x 8' Hendey Old Style, c. r. and t. a., q. c. g.
16"x 8' Bradford, c. r., loose change gear.
16"x 8' Monarch, c.r., stand. pattern.
16"x 8' Lodge & Shipley, old style, compound rest, q. c. g.
18"x 8' Prentice c. r., l. c. g., chuck.
18"x 8' Schumacher-Boye & Emmes, c. r., 5 step cone, s.b g., q.c.g.
18"x10' Star, 4-s. c., s. g., with 16" 4-jaw ind. chuck.
24"x12' Lodge & Shipley, patent hd., compound rest, q. c. g., arranged for constant speed motor drive.

TURRET LATHES AND SCREW MACHINES.

No. 2-A W. & S. g. h. tur. lathes.
No. 4 W. & S. g f. h. universal turret screw machine.
26" Gisholt heavy duty turret lathe.
2"x24' Jones & L. g. h. flat turret.
No. 00 Brown & Sharpe auto., (3).
No. 0 Brown & Sharpe auto. (2).
No. 4 Warner & Swasey, p. h., a. c. and b. f.
No. 2 Warner & Swasey, p. h., a. c. and b. f.
No. 4 Warner & S., g. f. h., a.c. and b. f.
No. 3 Foster g.f.h turret screw mch., with p. f. carriage and turret.
No. 55 Nat'l Acme 4-spdl. auto., (3).
2½" Cleveland model "A" auto. screw mch., with 5-hole turret.
1½" Cleveland model "A" auto. screw mch., with 5-hole turret.
18" Libby, factory rebuilt.
No. 2-G Brown & Sharpe automatics (2).
No 2 Brown & Sharpe turret forming (2).

DRILLING MACHINES.

No. 30 Natco, multiple spindle (4).
2' Arm Gang plain radial with t. a.
22½" Cincinnati, sliding head, friction back geared, power feed.
24" W. F. & J. Barnes, sliding head, back geared and power feed.
26" Aurora, slid. hd., b. g. and p. f.
7" No. 1 Allen sgl. spdl. ball b., (3).
2' arm Fosdick & Holloway plain radial, with t. a.
14" 4-spindle Leland & Co. h. s., b. b (2).
14" 3-spindle Henry & Wright, h. s., b. b.
14" 4-spindle Henry & Wright, h. s., b. b.

MILLING MACHINES.

No. 0 Bickett, hand, bench type (3).
Toledo hand milling machines.
No. 13-B B. & S. mfg. type, (1).
No. 1-B K. & T. "Milwaukee" plain, constant speed drive
No. 1 Brown & Sharpe vertical.
No. 3 Brown & Sharpe vertical, taper nose spindle
No. 4 Brown & S., cone drive univ.
No. 22 Garvin vertical, with circular milling attachment.
No. 1-Y Brown & Sharpe plain.

GRINDERS.

No. 1 Brown & Sharpe universal.
No. 3 Brown & Sharpe universal.
No. 2 Brown & Sharpe surface, (2).
No. 10 Brown & Sharpe plain.
No. 6-A Bryant internal.
No. 1 LeBlond cutter grinder.
Type "DE" Hisey-Wolf internal.
No. 11 Brown & Sharpe pl. grinders.
Plain emery wh'l stand with column.

SHAPERS AND PLANERS.

20" Hendey friction, (3).
20" Smith & Mills crank.
22"x22"x 5' Putnam planers (2).
38"x38"x14' Pond, 2 heads.

METAL CUTTING TOOLS AND SQUARING SHEARS.

Higley cold saw.
No. 6 Cockrane-Bly.

GEAR CUTTERS AND HOBBERS.

26" & 36" No. 3 Brown & Sharpe automatic.
No. 13 Brown & Sharpe automatic.
No. 18 Gould & Eberhardt vertical, for spur & spiral.
No. 12 Brown & Sharpe, bevel.

MISCELLANEOUS.

Centering machines, single spindle Cadillac, (2).
Cock grinder, 4-spindle No. 2 Turner automatic.

FOR SALE BY

Kemp Machinery Co., 215 N. Calvert St., Baltimore, Md.

Air compressor, National, 3 cylinder vertical, 100 cu ft.
Broaching machines, two No. 1 and one No. 0 Lapointe.
Grinder, edge or guide bar, 60" Springfield, practically new.
Miller, plain, No. 5 Brown & Sharpe, cone type.
Millers, 12" Cincinnati plain manufacturing, (2).
Threading machines, one each ¾" and 1¼" Geometric, first-class condition.
Wood cut-off machine, Greenlee, power feed, heavy.
Also 200 other Machine Tools of various types.
Send us your inquiries.

FOR SALE BY

A. M. Stoehr Machinery Co., 560 W. Adams St., Chicago, Ill.

Boring mills, 42" Baush; 54 & 60" Niles; all have 2 heads; and others.
Compressors, 12 different sizes.
Drill presses, single spdl., L. & G.; 2-spindle H. & W.; 4-spdl. Foote-Burt; 4-spdl. Barnes; 22" Rockford.
Furnaces, melting, for soft metal and aluminum.
Gear hobbers, cutters; 72" Brown & Sharpe; 60" Gould & Eberhardt; 36" Fellows gear shaper.
Grinders, No. 3 LaSalle plain and surface; 3x18" Norton, and others.
Lathes, 18x8 Barnes, hvy. duty; 19x8 LeBlond, q. c. g.; 16x8 Flather; 15 & 24 spinning, and others.
Milling machines, No. 6 Whitney; No 0 Rockford pl.; No. 3 Thurston dieing; No. 2-B Kearney & Trecker late type, double arm.
Oil extractors, centrifugal, (8).
Pipe machines, 6" Jarecki.
Punch presses, No. 16 Bliss horning; No. 3 Walsh, o. b. i., and others.
Punch & shears, No. 3 Long & A., d. c., ¾" thru ⅞"; No 14½ W., d.c., 15" throat; No. 5 Long & A.: d. c.
Riveters, No. 4 A & No. 5-A High Speed; No. 1 L. & A., ¾" capacity; No. 80-B & No. 2 Grant rivet spinner & hammer; No. 8 Stimpson automatic, for split rivets.
Saws, 9x9 Sterling high speed; 12" band, and eight others.
Screw machines, Nos. 2 & 3 Foster (12); Nos. 52 & 53 Acme, others plain and automatic.
Tapper, R. & S., ¾" capacity.
Welders, both spot and butt.
Wire straightening machines, (5).

FOR SALE BY

Kent Gear Co., - - 1743 Logan St., Denver, Colo.

Machine Tools worth investigating. We are quitting business. Machinery was bought in 1923. No war stuff.

BORING MILLS.

36" Gisholt, screw thread, motor driven, fully equipt ..... $2200.
30" Gisholt screw thread, motor driven, fully equipt ..... 2000.

GEAR CUTTERS AND HOBBERS.

No. 14½ Becker-Brainard universal milling machine, index head, vertical milling attachment and other attachments ..... 550.
No. 13 Brown & Sharpe automatic gear cutter, cuts spur, bevel mitre and interchangeable gears ..... 500.
No. 18H Gould & Eberhardt hobber, complete set change gears ..... 900.

BEVELING MACHINES.

3 Rochester 20" beveling or rounding machines, each ..... 325.

UNIVERSAL GRINDER.

Norton universal tool grinder, every kind of attachment ..... 400.

LATHES.

16" Cincinnati, block up, 3 chucks, 2 face plates, steady rest, V block, C-shaft 400
16" LeBlond, 5 cone, 4 chucks, 3 sets extra blank jaws, 2 face plates, thread cutting dial, c-shaft ..... 550.

MISCELLANEOUS.

50 Expanding drums, for cutting flywheel gears, on Gould & Eberhardt hobbers, from 8½" to 18"; make offer.
Gas heater, double, for heating ring gears, circular ..... $ 25.
Hobbs, 6 7-8-9-10-12; 6-8; 7-9; all new. H. S., D. T; make offer.

SECOND-HAND MACHINERY

FOR SALE BY

Pneumatic Scale Corporation, Ltd., Norfolk Downs, Mass.

OIL ENGINE.

One 25 H. P. Marshall type Y, Fairbanks-Morse oil engine, speed 325 r. p. m., in excellent running condition.

FOR SALE BY

Cyril J. Bath & Co., E. 70th & Mchy. Ave., N. E., Cleveland, O.

BORING MILLS—VERTICAL.

42" King, 2 swivel hds., rapid trav.
44" Baush, 2 swivel heads.
54" Colburn, rapid traverse, mtr. dr.
60" Niles, 2 swivel heads and one internal boring head.

BORING MILLS—HORIZONTAL.

3" bar Binsse, table type.
No. 1 Lucas, table type.
3½" bar Rochester, floor type.
3½" bar Landis, floor type.
5" bar Beaman & Smith, floor type.
Morton floor type boring, drilling and slotting machine.

DRILLS.

14-spindle 20" Barnes.
5' Bickford, radial.
No. 1, 8' wall radial.

DRILLS—UPRIGHT.

24" Cincinnati, slid. hd., fric. bk. grs.
28" Cincinnati, sliding head.
30" Aurora, sliding head.
32" Cincinnati, with tap. att.
24" No. 25 Foote-Burt, 90%.

FORGING MACHINES AND BULLDOZERS.

4, 5, & 25 Bulldozers.
1" & 2" Forging machines.
250-ton Mesta steam hydraulic, 85%.

GRINDERS.

10x36" Modern univ., and parts.
84" Diamond surface, 85%.
18x96" Norton plain.
Mammoth shear blade cap. 100" long

LATHES.

14" to 20" tool room, various lengths.
25"x12' LeBlond heavy duty.
30"x16' Lodge & Shipley selective geared head, arranged m d.
32"x14' Boyes & Emmes, dbl. b. g.
32"x18' Schumacher, cone head.
36"x12' Bridgeford, grd. hd., mtr. dr.
48"x26' Bridgeford, grd. hd., t. a.
48"—60"x34' Houston, Stanwood & Gamble, grd. head, motor drive.

MILLING MACHINES.

Style "B" Gooley & Edlund, (2).
No. 2-B heavy Brown & Sharpe, pl.
No. 3 Brown & Sharpe, plain.
No 4 Cincinnati high power miller.
Becker miller, model "C," table 14"x54".

PLANERS AND SHAPERS.

30"x30"x8' Gray, single head.
30"x30"x8' Cincinnati, single head.
72"x72"x16' Betts, four heads.
48"x48x18' Pond, 4 heads, heavy duty.
20" American crank shaper.

PUNCHES AND SHEARS.

No. 4 Doelger & Kersten alligator shear.
84" throat, Long & Allstatter capacity about ⅜" thru ¼".
Kling Bros. horn press, 60" horn, flywheel 50" dia., 6½" face.
48" throat No. 4 Southwark, capacity 2"x1½".
No. 6 Quickwork rotary shear, capacity up to 1½" plate.
36" throat Lennox rotary shear, capacity about ⅜" plate.

TUMBLING BARRELS.

Several sets 18"x48" chill lined square, with roller bearings and exhaust.

TURRET LATHES AND SCREW MACHINES.

3"x36" Jones & Lamson.
No. 3A Warner & Swasey.
18" Libby, bar and chucking equip.
No. 4 Bardons & Oliver.

MISCELLANEOUS.

Acetylene generator.
Blower, No. 4 Root, motor drive.
Cold saw, No. 4 Cochrane-Bly.
Cold saw, 48" Newton.
Gear cutter, 36" Gould & E.
Grinder, No. 116 Cochrane-Bly.
Hammer, 100 lb. Bradley helve.
Pipe machines, 2" & 4" Jarecki.
Press, No. 66 Consolidated, 4" str.
Pyrometer, Brown.
Slotter, 48" Niles - Bement - Pond, motor drive.

FOR SALE BY

McCoy-Brandt Machinery Co., 210-14 Penn Ave., Pittsburgh, Pa.

Bolt cutter, 1" Acme, double spindle.
Bolt cutter, 1½" Acme, dbl. spdl.
Bolt cutter, 1" Landis.
Boring mill, 36" Niles.
Boring mill, 42" Niles.
Boring mill, 42" King.
Boring mill, 66" Betts.
Boring mill, 96" Betts.
Boring mill, 84" Poole.
Boring mills, 24", 36" & 42" Bullard rapid production.
Boring mill, No. 2 Barrett horiz.
Boring mill, No. 3 Barrett horiz.
Boring mill, 5" D. & H. floor.
Brake, 10'x3/16" Chicago, belted.
Broaches, Nos. 0, 1, 2 & 3 Lapointe.
Drills, radial, 3' Mueller.
Drills radial, 5' Prentice.
Flanging machine, ½" McCabe.
Forging machine, 1" Acme. Rivett.
Forging machines, 1½, 2½, & 3½ Acme, steel bed.
Gear cutter, No. 6 B. & S., late type.
Gear cutter, 24" Gleason auto.
Gear cutter, 48" Gleason auto.
Gear cutter, 48" Cincinnati.
Lathe, 11"x 6' Myers.
Lathe, 15"x 6' Sidney.
Lathe, 16"x 6' LeBlond.
Lathe, 16"x10' L. & S.
Lathe, 16"x 6' Reed-Prentice, g. h.
Lathe, 18"x12' Hollingworth.
Lathe, 27"x18' Sidney.
Lathe, 30"x20' Sidney.
Lathe, 34"x17' Pond.
Lathe, 36"x20' American, g. h.
Nut tappers, 10 spdl National ½".
Pipe machines, 12, 10, 8, 4 & 2".
Planers, 96"x72"x24' D. & H., o. s.
Planer, 60"x60"x14' Gray.
Planer, 48"x72"x20' Gray.
Planer, 36"x36"x18' Gray.
Planer, 36"x36"x12' Pond.
Punch, multiple, 96" L. & A., 350-ton.
Punch, multiple, 120" H. & J.
Punch, multiple, 72" Danville.
Screw machine, No. 0 Foster.
Shaper, 24" Kelly.
Shaper, 20" Cincinnati.
Shaper, 24" Hollingworth.
Shaper, 24" Cincinnati.
Shears, many sizes, all types.
Turret, 3x36 J. & L.
Turret, 3½x36 Acme, 6½" h. s.
Turret, 24" Steinle, 6½" h. s.

FOR SALE BY

W. P. Little Co., West 9th & Front Sts., Cleveland, Ohio

GRINDERS

14" Pratt & Whitney vert. surface.
No. 75 Heald internal, (3).
No. 1 B. & S. universal.
No. 24 Gardner vert. spindle disc.
No. 6 Bryant chucking, (2).
No. 3 Modern universal.
6"x18" Landis pl. self contained c. s.
No. 10 Besly disc, pl. & univ. tables.

LATHES.

14"x6' American, q. c. g. and t. a.
18"x8' Blaisdell, semi q. c. g.
16"x6' Bradford, q. c. g. and t. a.
20"x8' Walcott, semi q. c. g.

PLANERS.

22"x22"x 6' Davis & Egan.
32"x32"x14' Pond, 2 heads.

POWER HAMMERS.

50 lb. Beaudry, (2).
50 lb. Bradley upright compact.

PUNCH PRESSES.

E. G. 22 Ferracute, grd. arch, m. d.
No. 56 Cleveland straight side.
S. G. 55 Ferracute dble. crank.
No. 3 Cady, Stiles pattern.

RIVETING MACHINES.

Grant spinner No. 80, ¾" cap.
½" Shuster rotary, elastic blow.
½" Shuster rotary, elastic blow.

TURRET LATHES.

2"x24" Jones & Lamson flat turret.
1½" Cincinnati Acme, p. f. to turret.

HYDRO-PNEUMATIC PRESS.

Metalwood hydro-pneumatic press No. H-33, 15-ton capacity.

MISCELLANEOUS.

Beading machine, F-20 Yoder.
Boring mill, 24" bar Lucas.
Broach, 3-A LaPointe.
Cold saw, 20" Burke.
Drill, No. 25 Foote-Burt heavy duty.
Radial, 4' Bickford, s. p. d.
Screw mche., No. 1 Brown & S. auto
Slotters, 8" & 10" rotary tables
Spline miller, 2" Pratt & Whitney.
Tapper, ½" Rickert & S., radial
Tapper, ½" R. & S. on column.
Wiring machine, No. 1 Magee.

Partial list; send us your inquiries; 150 other tools in stock.

FOR SALE BY

J. P. Rentschler & Co., - 6722 N. Maplewood Ave., Chicago

PRESSES.

No. SP-1 Sundstrom hand lever.
No. 87 Bliss foot-lever press.
Nos. 18, 18-C & 19 Bliss, o. b. i.
No. 3 R. & K. o. b. i., 4" stroke.
No. 3 Perkins horning press.
No. 248 Cameron auto., o b. i.
No. 1½ Bliss, toggle drawing.
No 165 Consol. dbl. crank.

MISCELLANEOUS.

Grinder, 12"x36" No. 2 Cincinnati, cylindrical, full universal.
Grinder, No. 1 Cincinnati universal tool and cutter.
Power square shear, No. 30 Niagara, capacity 20 ga., length 30".
Seamers, No. 12 McDonald auto. for ½ & 1 gal. cans (2).
Plenty of other bargains. Send us your inquiries.

FOR SALE BY

Herman L. Winterer, 943-53 N. Front St., Philadelphia, Pa.

LATHES.

43"x17' 4½" Bement-Miles.
37½"x14' Johnson d. b. g., q. c. f., t. a.
32"x12' Pittsburgh, heavy duty, q.c.g.
27"x12' Bullard.
26"x11' Wickes, q. c. g.
28"x10' Niles, q. c. g.,
25"x14' Hendey, q.c.g., taper attachment, oil pan, (2).
24"x14' Porter.
21½"x8' LeBlond.
20"x8'6" Walcott, d. b. g., c. g., (2).
19"x10' Draper, patent head.
18"x 8' Davis q. c., d. b. g.
18" x 7' Chard, d. b. g., semi q. c. g.
18"x6' to 8' lathes, (6).
And many others.

TURRET LATHES.

3½x28" Pond, triangle.
3x36" Pratt & Whitney, hollow hex.
20x7' Bridgeport, 2½" h. s.
19"x7' Fay & Scott, back grd.
No. 22½ Garvin Monitor.
14"x 6' Warner & Swasey.

DRILL PRESSES.

42" Gang radial, s. p. speed box.
40" Barnes horizontal radials, (2).
36" Bickford radial, circular base, motor driven.
36" Rockford, tapping attachment.
28" Rockford, q. c. g. feed, (2).
34" Barnes, s. h., geared face, comp. table
24" Sibley & Ware, sliding head.

MILLING MACHINES.

No. 5 Cincinnati, table 9½x50½".
No. 15 Garvin, table 12x42".
No. 3 Becker-Brainard, new model, q. c. g., vertical attachment.
No. 3 Hendey-Norton, q. c. g.
No. 5-C Becker vert., rotary table.
No. 1 Milwaukee plain.

PLANERS AND SHAPERS.

12'x10'x25' Sellers planer, 4 heads.
48"x37"x9' Sellers, 2 heads.
48" Morton draw-cut shaper.
16" Potter & Johnston crank shaper.
15" Lodge & Davis shaper.
15" Potter & Johnston shaper.
14" Warren shaper.

MISCELLANEOUS.

Boring mill, car wheel, 60" Newton.
Boring, drilling and milling machine, 17½' Bement Niles horizontal.
Boring mill, No. 1 Sellers, horizontal, 2½" bar.
Boring mill, No. 3 Binsse, horizontal, 2½" bar.
Centering mche., 5" Whiton, dbl. sp.
Centering mche., 4" Whiton, dbl. sp.
Grinder, 13½"x5' Landis universal.
Grinder, disc, No. 17 Besly.
Hammer, 15 lb. Bradley helve.
Hammer, 40 lb. Bradley, helve.
Hammer, 60 lb. Hotchkiss.
Hammers, 60 lb. Bellefonte upright; 2
Keyseater, 18" stroke Morton.
Pipe machine, 4" Cox.
Molding machine, 24" Taber, with roll over.
Punch presses, all sizes, (55).
Punch, multiple, No. 5 H. & J., gate pat., 86".
Punch & shear, No. 2 H. & J., dbl. end, 20" th. cap., 1½" in 1"
Punch, No. 2 H. & J., 15" th., arch. jaw, 1½" in 1".
Punch, horiz., L. V., grd., cap. 1".
Punch & shear, Industrial Wks. d.e., capacity ½" in ¾"; shearing ¼"x6".
Riveter, air, 6' gap Allen, cap. 1½".
Slotter, 14" Niles.
Tooth rounding mche., Schuchardt & Schutte.

Large assortment of General Machinery. Send for complete Price List.

FOR SALE BY

McMullen Machinery Company, - - Grand Rapids, Mich.

Automatic, 8" Cleveland.
Automatics, No. 00 B. & S.
Band saw, Napier, metal.
Cut-off saw, No. 4 N. & B.
Grinder, No. 6-A Bryant.
Lathe, 24x26 Greenlee, flat turret.
Miller, No. 2-H Becker vertical.
Pipe machine, 6" Merrill No. 6½.
Press, Chicago scrap baler.
Press, No 3 Manville, d a.
Presses, No. 6 Manville, pillar, (3).
Presses, No. 6B Manville, pillar,(2).
Shear, No. 14 Pettingell, rotary.
Welders, No. 10-A Thomson vert.(7)

Ask for Complete List.

FOR SALE BY

B. L. Saltzman, 809 W. Lake Street, Chicago, Ill. 524 W. Van Buren St., Chicago, Ill.

Bolt threader, Geometric ½" to 8".
Bolt threader, Geometric ¾" to 14".
Drills, Champion 19", 2" cap.
Drills, Barnes 16".
Drills, Silver 20".
Drills, Cincinnati b.g., taper att., 20".
Drills, Cincinnati dbl. b. g., 20".
Drills, Aurora 22".
Drills, Kokomo 24".
Drills, Snyder 28".
Drills, 4-spindle, 14".
Grinders, Taylor & Fenn cylinder.
Grinders, drill.
Lathes, Reed 16"x5'.
Lathes, Reed 16"x6'.
Lathes, D. & W Pond 16"x7'.
Lathes, Lodge & Shipley 16"x10'.
Lathe, Chard 18"x7', taper att.
Lathe, Hamilton 18"x8'.
Miller, No. 5 Ingersoll.
Mills, No. 3 and No. 5 Cincinnati.
Planer, Whitcomb 42"x42"x12', 2 heads on rail.
Punch presses, Bliss, (Stiles type), No. 2½
Punch presses, Niagara No. 5.
Punch presses, Loshbough-J No.4.
Punch presses, Milwaukee No. 5.
Screw machines, Garvin No. 12½.
Screw machines, Bardons & Oliver No. 4.
Screw machines, Foster No. 6.
Screw mchs., Warner Swasey No. 6.
Screw machines, Foster, hand.
Screw mchs., Pratt & W, hand.
Screw machines, Warner & Swasey, hand, Nos. 1 & 2.
Shapers, 12", 16" & 24".

Motors and Generators—Factory Transmission.

FOR SALE BY

The Hess-Schenk Company, 3868 Hamilton Ave., Cleveland, O.

DRILL PRESSES.

14" Allen, h. s., b. b.
26" Barnes, sliding hd., b. g., p. f.
4' Hammond, h s, b. b. radial, with tapping attachment.
2-spindle Avey h. s., b. b.
4-spindle Avey h. s., b. b.
4-spindle Leland-Gifford h s., b. b.
4-spindle Henry & Wright h. s., b. b., model K.
4 spindle Rockford 20" drill.

PRESSES.

No. 2 Niagara bench press.
No. 3 Rockford open back inclinable.
No. 54 Toledo straight sided geared press, 8" stroke.
No. 5 Greenerd arbor presses, (2).

AUTOMATICS AND TURRET LATHES.

No. 4 Warner & Swasey universal turret lathe.
2" Model B Cleveland auto., 18" fd.
No. 53 National Acme automatic, with motor drive.
No. 515 National Acme automatic.

MILLING MACHINES.

No. 6 Whitney hand miller.
No. 1½ Hendey plain, back geared.
No. 2 Cleveland, sgl. pul. dr., univ.
No. 12 Brown & Sharpe plain.

GRINDERS.

No. 11—6x32 Brown & Sharpe plain self-contained cylindrical grinder.
6x32 Norton plain cylindrical.
10x52 Landis pl. cylindrical grinder, self-contained.
No. 205 Rivett radial grinder.

MISCELLANEOUS.

Bolt cutter, No. 1½ Acme.
Die sinker, No. 2 Pratt & Whitney.
Shaper, 21" Averbeck, back geared.
Shear, No. 17 Niagara, circle.
Spline milling machine, 4" Pratt & Whitney.

FOR SALE BY

J. L. Lucas & Son, Inc. • No. 3 Fox Street, Bridgeport, Conn.

BORING MILLS

36" Bullards, chuck jaw, table, power rapid traverse (2), each.....$2000.

DRILLS.

No. 11 Natco multiple, 7-spdl. $ 375.
No. 12 Natco multiple, 12-spdl. 1250.
No. 13 Pratt Whitney 12 spdl.. 900.
Radial, 3' Carlton, tap. att. (2) $ 450.
Radial, 4' Hammond, tap att.. 575.

GRINDERS.

No. 1 Brown & Sharpe univ....$ 475.
No. 2 Taft-Pierce univ. .....$ 575.

HAMMERS.

250 lb. Beaudry Champion.....$ 550.
600 lb. Bliss board lift ..... 750.
600 lb. mod. D. Billings Spenc. $ 750.

LATHES.

14"x6' Hendey, yoke head, rebuilt .....$ 825.
18"x8' Reed P., grd. hd., m. d. 675.
32"x18' New Haven, 95% new .$1500.
42"x12' Bridgeford, geared head motor drive..... 1750.

MILLERS.

No. 6 Whitney, hand, (4).....$ 125.
No. 1 Brown & S. univ., (2).... 575.
No. 2 Garvin duplex, rebuilt..$ 875.

PRESSES.

12 No. 61 Bliss.....$ 250.
No. 04 Consolidated, (4)..... 325.
No. 10 Z. & H. percussion..... 1000
No. 12 Z. & H. percussion.....$1250.
No. 59 Toledo, s.s., s.a., dbl. gear 3500.

MISCELLANEOUS.

Gear cutters, 4" Waltham, (8).$ 500.
Gear cutter, No. 4 B. & S..... 800
Header, No. 2 Wtby., fl., d s., s.d. 750.
Nibbler, No. 1 Campbell .....$ 225.
Riveter, No. 80 Grant, new .... 110.
Shear, 836 Niagara, pwr. sq.... 525.

FOR SALE BY

The O'Brien Machinery Co., 113 N. Third St., Philadelphia, Pa.

Boring machine, 36" Bullard, turret head, vertical.
Die sinker, No. 2 Pratt & Whitney.
Die sinker, No. 3 Pratt & Whitney.
Die sinker, No. 4 Pratt & Whitney.
Drill, 32" Aurora, motor driven, tapping attachment.
Grinders, foundry, Norton heavy duty, (2).
Hammer, 4000 lbs. Chambersburg steam drop.
Hammer, 2500 lbs. Chambersburg steam drop.
Hammer, 2000 lbs. Chambersburg, double frame, steam
Hammer, 1000 lbs. Chambersburg steam drop.
Hammer, 600 lbs. Cham'burg st. d.
Hammer, 1500 lbs. Erie sgl. frame st.
Hammer, 1000 lbs Niles-Bement-Pond, double frame.
Hammer. 1000 lbs. Billings & Spencer board drop.
Hammer, Bement-Miles, 300 lbs.
Lathe, 24"x10' American, taper att.
Lathe, 30"x30' Pond.
Lathe, 30"x30' Harrington.
Lathe, 20/40"x10' Rahn-Larmon extension bed gap.
Milling machine, Newton combination circular milling machine and saw for structural work.
Milling machine, No. 3 Becker univ.
Lathe, 27"x10' LeBlond, with turret attachment.
Milling mche., No. 4B Becker vert.
Pipe machines, 2", 4", 6", 8" & 12" Oster, Cox, Williams, Eaton-Cole & Burnham and Jarecki makes, belt or motor driven, comp. stock.
Planer, 36"x36"x12" Woodward & Powell motor driven, 3 heads.
Planer, 36"x36"x24', Bement, 4 hds.
Press, No 73½ Bliss trimming press, with side shear.
Presses, Nos. 18, 19 and 20 Bliss.
Press, Chambersburg motor driven trimming.
Punch and shear, No. 3 Hilles & J., dbl. end, motor dr.; punch end, 42" thrt., cap. 1½" thru 1"; shearing end, 36" thrt., cap. 1" plate, 2½" round, 7"x1½" flat, 5"x5"x⅞" angle.
Punch and shear, Pels combination; punching cap. 1" thick; shearing, 2" rd., 2½" squares, 6x6x⅞" angles.
Radial drill, 5' Pond. motor driven.
Saw, Newton No. 2 cold saw.
Saw, Espen Lucas No. 10 cold saw.
Shaper, 24" American.
Shapers, 12", 14", 16", 21" and 24" stroke, assorted makes.
Shaper, 3 Bement-Miles massive heavy duty, traveling head.
Turret lathe, No. 6½ Bardons & Oliver, 2½" w. f. cap., cabinet base.

SECOND-HAND MACHINERY

FOR SALE BY

Schmitz & Co., - - 35 S. Clinton St., Chicago, Ill.

Drill press, sensitive, No. 1 taper 3-spindle.
Drill press, Barnes 28", b. g., p. f.
Furnace, hardening, 10"x18"x24".
Hack saw, power, Racine high spd.
Lathe, bench, Van Norman.
Lathe, 18"x8', pan bed.
Lathe, 16" pattern makers; extras.
Paper cutter, 30" Sheridan.
Punch pr'ss's, D-52 & No 3 Ferracute.
Punch presses, Farrell Foundry, 8" stroke.

FOR SALE BY

Syracuse Supply Company, 314 W. Fayette St., Syracuse, N. Y.

Guaranteed NEW MACHINES in original crates at prices below list:

Automatic, 2¾" Gridley, single spdl.
Crucible, FD-104 Hoskins.
Pipe machine, No. 70 Forbes.
Screw mchs., No. 4 W. & S., g.f.h., (3).
Straightener, No. 2½ Corey.

Exceptional values in USED TOOLS:

Automatic, 1½" model B., Cleveland.
Automatic, 1½" model A., Cleveland.
Drill press, 25" W. F. & John Barnes.
Drill press, 4-spindle Barr sensitive.
Drill press, 2-spindle Barr sensitive.
Grinders, Diamond wet tool.
Lathe, 3x60 Fitchburg lo-swing.
Lathe, 14"x 6' Monarch.
Lathe, 16"x 8' American, geared head, rebuilt.
Lathe, 16"x10' American.
Lathe, 8x60 Fitchburg lo-swing.
Miller, 3½ Bilton automatic.
Miller, 1½ Bilton automatic.
Miller, No. 5 Becker vertical.
Millers, No 4 LeBlond plain (2).
Planer, 30"x30"x16' L. W. Pond.
Planer, 60"x60"x22' Niles.
Radial, 5' Pond.
Tilted turret, No. 6 Wood.
Turret lathes, No. 4 Foster (2).
Turret lathe, No. 2 Warner & S., hollow hex.
Turret lathe, 2½x26 Pratt & Whitney.
Turret lathe, No. 2½ s. g. Garvin.
Turret lathes, 3x36 Jones & L. (3).
Turret lathe, 2x24 Jones & Lamson.
Turret lathe, 21" Gisholt.
Turret lathe, No. 3 Cincinnati-Acme.

FOR SALE BY

J. E. Haetten & Co., Inc., - 50 Church St., New York, N. Y.

Automatics, 00 Brown & Sharpe, serials 1500, (2), each	$ 400.
Automatics, ⅝-¾" Cleveland model B, (8), each	100.
Boring mill, 46" Rogers, 2 swivel heads, b. d	650.
Boring mill, 42" Bullard, motor drive, rapid traverse	1500.
Blue printer, Revolute 45" continuous, 30 amperes	400.
Box nailing machine, 12 nails 10 D, 36" range used 4 months	600.
Drill, 4-spindle Sipp high speed	500.
Drill, 3' Carlton sensitive plain radial	450.
Drill, No. 18 Garvin D. plex horizontal	250.
Grinder, 18x96 Norton plain, c. s. drive, good	900.
Grinder, tap relieving with truing device	75.
Grinder, 10x36 Norton BA, built in motors 220 v., 3 ph., 60 cycle, new	2500.
Grinder, Ingersoll cutter serial 2643, used 1 month	500.
Grinder, 14" Pratt & Whitney vertical 36" magnetic chuck	800.
Hammer, 200 lb. Gould & Eberhardt, sheave lift	250.
Lathe, 14x8 Prentice, s b. g., q. c. g., chuck	225.
Lathe, 11x8 Seneca Falls, s. b. g., l. c. g., chuck	100.
Lathe, 16x6 Reed, s. b. g, l. c. g. two chucks	50.
Miller, No. 2 Kempsmith plain c. s., used 2 months	850.
Miller, 1A Milwaukee plain, vertical attachment	750.
Miller, No. 1½ Rockford universal, dividing heads, vise	650.
Miller, No. 3 Cincinnati, universal, s. p. d., vert cal attachment	1500.
Planer, 30x30x12 Pease, 1 head, b. d	400.
Planer, 30x30x6 New Haven, 1 head, b. d	250.
Planer, 12" stroke, crank type, 12x18 table, 9" rise	75.
Riveter, ⅝" Shuster, rotating plunger	50.

FOR SALE BY

M. A. Wertman Mchy. Co., 505 Superior Bldg., Cleveland, Ohio

Bolt cutters, 1½" Landis, single head, (2).
Drill, No. 310 Baker.
Grinder, 6"x20" Fitchburg plain.
Grinder, disc, No. 120 Gardner combination, b. b.
Lathe, 10"x4' Seneca Falls collets and chuck.
Lathe, 18"x6' Monarch, l. c. g.
Lathe, 17"x8' Sidney, q. c. g.
Miller, No. 1½ Garvin duplex.
Planer, 24"x6' Cincinnati, one head.
Tapper, ⅝" Rickert Shafer vertical.
Turret machine, vertical, Bullard rapid production type, 24".

FOR SALE BY

Tubor, Velick & Co., Inc., - - 628-630 W. Lake St., Chicago, Ill.
Telephones: Monroe 4199-6813. No Branches

PUNCH PRESSES.

No. 0 & No. 2 V. & O.
No. 3 Niagara, (3).
No. 15 Torris Wold.
18 C Bliss.
Perkins punch presses, ⅝" str. (20).
Long & A. horn punch, cap. 1½x1.
Swaine geared, (2).
No. 5 Rockford, (2).
Bliss bench presses, (5).
Ryerson 4' radial.

DRILL PRESSES.

14" Excelsior.
20" b. g., p. f., new, $130.
20" drill presses (40), each $40.
26" Weigel.
30" Reed-Prentice.
Demco high-speed drills.
Bench type drills.
36" Hilbert radial.
Bickford radial drill.
Drill presses, 1-2-3-4 sp. Avey, h. s.

MILLING MACHINES.

No. 4 LeBlond plain.
No. 4 LeBlond univ., sgl. pulley dr.
No. 2 Cleveland universal, s. p. dr.
A number of hand millers.

LATHES.

16"x 6' Hamilton, q. c., (2).
16"x 6' Sidney, q. c., (2).
17"x 9' Chard, q. c., (9).
18"x 6' Lehmann, q. c., (2).
24"x10' Canadian, q. c., d. b. g., (3).
22"x10' Cisco, q. c.
28"x10' LeBlond.
26"x12' Prentice.
10", 12" and 14" Shepard screw cutting, quick change.

PLANERS.

30"x30"x12' Niles-B.-P., 2 heads.
36"x36"x 7' Flather, 2 heads.

SCREW MACHINES.

Brown & Sharpe automatic.
No. 2 Smith, hand.
Pratt & Whitney, hand, (3).
Nos. 1, 2, 3 and 4 Foster screw mchs.

GRINDERS.

Bath universal, with magnetic chk.
La Salle surface, with magnetic ck.
Gardner No. 6 disc grinder.
No. 14 Besly, disc.
Emery grinders, $2 and up.

WOOD-WORKING MACHINERY.

Band ripsaw, West Side.
Boring mills, Andrew, (3).
Moulders, 8" Yates C-4. (2).
Shapers, Advance dbl. spdl., 5 h. p., a. c. motor in base, (6).
Saw tenoners, Pettingell.
Shapers, double spindle, Whitney and Fay.
Swing saws, Porter, (4).
Saw table and jointer combined, portable.

MISCELLANEOUS.

Gap shear, 36" Wais & Roos.
Hack saws.
Mill, 36" Colburn.
Motors, 75 h. p. G. E., a c., slip ring, 600 r. p. m., (2).
Motors, a. c. and d. c.
Pressed steel bench legs, (1,000).
Pressed steel hangers and bearings, all sizes.
Pressed steel stools, with backs.
Saw mandrels, $3.
Thread hobber, Pratt & Whitney.
Time clocks, International.
Woodworking machines.

Leather belting. Pulleys, shafting and hangers.

FOR SALE BY

United Machinery & Supply Co., 1807 S. Second St., St. Louis, Mo.

GRINDER

No.22 Heald shaper head automatic rotary grinder, with magnetic chuck and generator Bought new and used only a few months. Cost new $1,750. Our price, cars St. Louis..... 735.

FOR SALE BY

Cincinnati Machinery & Supply Co., 215 E. Pearl St., Cincinnati, O.

Machine Tools Worth Investigating.

Bolt cutter, 1½" Landis double spindle, with lead screws.
Bolt cutter, 1" Landis double spindle.
Disc grinder, No. 21 Besly 36", complete, with tables and press.
Forcing press, 30-ton Lucas.
Gear hobber, 18-H Gould & Eberhardt.
Lathe, 28x48 McCabe double spindle screw cutting.
Press, No. 8A Rockford straight side, 100 tons.
Radial drill, 7' American, gear box, s. p. d.
Radial drill, 5' American, gear box, s. p. d.
Shear, No. 272 Niagara power squaring, 72", 14 gauge and lighter.
Surface grinder, No 2 Brown & Sharpe.
Surfacing machine, No. 4 Peerless

Plenty of others in stock; write for circular.

FOR SALE BY

Peninsular Machinery Co., 429-31 E. Jefferson Ave., Detroit, Mich.

LATHES.

13"x 5' Blount speed lathe.
13"x 5' South Bend, (2).
13"x 6' Willard, (3).
13"x 6' Sebastian, (4).
14"x 6' Carroll-Jamieson.
14"x 6' Reed, l. c. g., (3).
14"x 6' Reed Prentice plain turning, new, (2).
14"x 6' Prentice l. c. g. engine, (2).
15"x 6' South Bend l.c.g. engine, t. a.
16"x 8' Bradford, l. c. g.
16"x10' Monarch q. c. engine, m. d., with motor.
17"x8' LeBlond rapid product'n, m.d.
21"x11' LeBlond, all geared, (2).
21"x12' LeBlond line bearing.
26"x10' LeBlond crankshaft.
36x36 Lo-Swing.

DRILLING MACHINES.

3-spdl. Henry & Wright, h. s., b. b.
22½" Sibley all-geared, p. f.
28" Barnes, s. h., tapper.
No. 3 Baush multiple.

MILLING MACHINES.

Briggs type A.
No. 32 Kempsmith.
No. 33 Kempsmith plain.
No. 2 Brown & Sharpe plain.

TURRET SCREW MACHINES.

2½x26 Pratt & Whitney, a. c.
No. 3 Foster f. h. turret lathes, (2).

GRINDERS AND POLISHERS.

No. 10 Brown & Sharpe plain.
No. 190 Greenfield universal.
20" Blount wet grinders.
No. 15 Bryant, motor drive.
No. 5 Oliver m. d. drill grinder.
26" Kern, s. h., b. g., p. f. t. a.
No. 11 Lumsden, b. b., cup wheel, new, (2).
10x30 Frazer self-contained.
6x32 Norton plain cylinder.
No. 23-B Valley City disc, new.

MISCELLANEOUS.

Band saw, 6" Napier.
Broaching mche., LaPointe, Hudson make, ½" capacity.
Centers, bench, Brown & Sharpe.
Cutting-off mchs., 4" Hurlbut-R., (2).
Gear generator, 18" Gleason, bevel.
Gear shapers, No. 6 Fellows, (3).
Gear tooth rounder, 18" Schuchardt & Schutte.
Hammer, drop, No. 5 Williams-W.
Lapping machines, Bethel-Player, new, (2).
Metal cutter, No. 1 Gray.
Screw slotter, No. 1 National Acme.
Shaper, 7" Rhodes horizontal.
Tooth round's, 12" Rochester aut. (2).
Tumbling barrels, No.3-S Globe, (2).

FOR SALE BY

Botwinik Brothers, Inc., - 67 Water St., New Haven, Conn.

MILLING MACHINES.

50—Pratt & Whitney 5" automatic milling machines, production type, complete and practically new. Price $200.00 each, net f. o. b. New Haven, Conn.

Wire, write or phone.

FOR SALE BY

The Reeve-Fritts Co., 558-560 W. Washington Blvd., Chicago, Ill.

Drill, 3-spindle Barr, sensitive.
Drill, 24" Milwaukee, b. g., p. f.
Engraving machine, No. IG Gorton.
Gear hobber, No. 1 Farwell.
Gear shaper, 5"x36" Fellows.
Grinder, 5"x10" Greenfield plain.
Grinder, No. 21 Fraser, plain.
Lathe, 9"x13" Porter-Cable.
Lathe, 9"x20" Porter-Cable.
Lathe, 14"x8' Hendey, q. c. g., taper.
Miller, No. 1 Bickett, vertical, p. f.
Pipe machine, 6" Merrill.
Pipe machine, 12" Curtis & Curtis.
Planer, 32"x24"x6' Rock.
Planer, 56"x72"x14' Gray.
Polishing machine, type F Production, automatic feed.
Press, type P G. 5 Ferracute, grd
Saw, No. 11½ Higley cold saw.
Screw machine, No. 3 Foster, friction head, p. f.
Screw mche., No. 52 Nat'l Acme, 4-sp.
Screw mche., No 53 Nat'l Acme, 4-sp.
Turret lathe, 8½x16 Potter & J.
Turret lathe, 21" Gisholt.

FOR SALE BY

Brownell Machinery Co., - 150 Pine St., Providence, R. I.

BORING MILLS.

24" Bullard rapid production vertical.
No. 1½ Beaman & Smith horiz. drilling, tapping, boring and milling machine.

GRINDERS.

No. 11 B. & S. plain, 4x20.
No. 2 B. & S. universal.
No. 2 Norton tool & cutter.
No. 1 Norton tool & cutter.
No. 3 B. & S. tool & cutter.
No. 2 B. & S. cutter & reamer.
No. 1 B. & S. automatic surface.
Garvin hand feed surface.
Grand Rapids drill, ⅛ to 2½.

MILLING MACHINES.

No. 2 heavy B. & S. plain.
No. 2 B. & S. plain.
No. 3 B. & S. plain.
No. 2 Brown & Sharpe vertical spdl.
No. 2-A Becker vertical.
Model "C" Becker high power vertical rotary.

PLANERS.

48"x72"x20' Gray, 4 heads.
36"x36"x12' Gray, 2 heads.
17"x20"x4' Whitcomb-Blaisdell.
30"x30"x6' Detrick & Harvey open side, 2 heads.

POLISHING MACHINES.

Boland ½ h.p. polishing bench 24x51, 580 volts, 60-cycle, 3-phase.
Boland hot blast dryer, 245"x22".

SCREW MACHINES.

No. 6 B. & S. geared friction head.
No. 4 B. & S. plain head.
No. 0 B. & S. wire feed, (6).
3x36 J. & L. turret.
No. 8 Warner & S., 3¾" cap., g. f. h.
No. 2 P. & J. piston & piston ring.

MISCELLANEOUS.

Broaching mche., No. 2 Lapointe.
Coupling turn, 5 h. p. No. 1 Almond.
Coupling turn, 10 h.p. No. 2 Almond.
Chucks, magnetic, Taft-Peirce rectangular, 110 v., d. c.
Drill, radial, 5' Prentice.
Hammer, power, 300 lb. Beaudry Champ.
Hammer, auto. drop, 200 lb. Standard.
Hammer, pl. drop, 500 lb. Miner & P.
Press, power, No. 3-B Baird s. a. roll feed.
Press, No. 3 Adams hand screw.
Reamers, Taft-Pierce adj. hand, new at 40/50% discount.
Shaper, 15" Potter & Johnston.
Slotter, 12" Bement Miles.

FOR SALE BY

Mid-West Machine Tool & Supply Co., Davenport, Iowa

High-Grade Production Equipment Priced to Sell.

Automatic, ¾"-1½" Cleveland.
Automatic, No. 2 Brown & Sharpe.
Drill, 1-S Garvin duplex.
Gear tooth rounder, 12" Ingle.
Grinder, No. 10 B. & S. plain.
Grinder, 6x32" Norton.
Hobbers, Nos. 3 & 12 B. & C.
Lathe, No. 4 Milholland universal.
Miller, 18" Cincinnati, b. g.
Miller, No. 13-B B. & S., production.
Radial, 4' American heavy duty.
Radial, 4' American sensitive.
Radial, 4' Mueller.
Turret lathe, 24" Gisholt.

Partial list; send us your inquiries.

FOR SALE BY

F. N. Wilson Machinery Co., 3131 Shields Ave., Chicago, Ill.

Air compressors.
Cold saw.
Grinders.
Hack saws.
Hammer Nazel 5 N. power, handles 6"x6" material
Lathes, 36" & 26" Bridgeford heavy duty, 10' centers.
Lathes, 19" & 21" LeBlond, q.c.gears.
Lathes, repair shop, small 17".
Milling machine and keyseater suitable for repair work.
Turret lathes, Steinle, 24" swing, 98% new.
Water pumps, all sizes.

Hoisting engines, derricks, cranes, concrete mixers.

FOR SALE BY

Reliance Machinery Sales Company

1405 Brighton Road, - - - N. S. Pittsburgh, Pa.

Automatic, 2" Cleveland, model A.
Automatic, 2½"-3½" Cleveland model A
Blower, No. 5 Champion, 6½" outlet.
Blower, Amer. pressure, 461 cu. ft.
Boring mill, No. 44 D. & H., floor type, 3½" bar.
Boring mill, Niles horiz., 4½" bar.
Boring mill, 34" Colburn, 1 head.
Centering mch., 4" Whiton, s. h. 2-sp.
Drill, 16" Fosdick 6-spdl. m. d.
Drill, Baush 8-spindle, No 3 taper.
Drill, 21" Cincinnati, sliding head.
Drill, 24" Hoefer, sliding head.
Drill, 26" Snyder, sliding head.
Drill, No. 310 Baker heavy duty.
Drill, Model "F" Turner auto. tur.
Gear cutter, 36"x10" G. & E., s. p. d.
Grinder, No 3 Brown & S univ.
Grinder, 12"x30" Modern plain.
Grinder, W P L New Yankee, cap. 2½".
Hammer, 80 lb. Bradley cush. helve.
Lathe, 12"x 6' Seneca Falls.
Lathe, 12"x10' Davis tool r'm, q.c.g.
Lathe, 14"x 6' Hendey, g. h., m. d.
Lathe, 14"x 6' Seneca Falls, q. c. g.
Lathe, 17"x8' Sidney, hvy. duty, q.c g.
Lathe, 18"x8' L. & S., q. c. g., m. d.
Lathe, 18x10 Whitcomb-B., g.h., s.p.d.
Lathe, 24x10 Whitcomb B., g. h., m.d.
Lathe, 24"x22' American, g. h., m. d.
Lathe, 30"x12' Johnson, triple grd.
Lathe, 34"x12' LeBlond, triple grd.
Miller, No. 1 Knig't drill.
Miller, No. 1½ American plain.
Miller, No. 2 Cincinnati, plain, v. a.
Miller, No. 2 Brown & S. universal.
Miller, model "C" Becker, vert.
Millers, Sellers, Lincoln type, (2).
Miller, model "H" Becker mfg type.
Pipe machine, B. & K., ½" to 2" m. d.
Pipe machine, 8" Cox, cap 2½" to 8".
Pipe machine, Merrill, 2½" to 12".
Press, 15-ton Lucas forcing.
Press, 30 ton Lucas forcing.
Press, No. 19 Bliss, o b. i., 2" str.
Press, No. 5-A Willard, o.b.i., 2" str.
Press, No. 87 Niagara, screw.
Presses, Nos. 61 & 62 Bliss, o.b., f.w.
Press, Ferracute DD2, o. b. i., cam.
Press, No. 10 Bliss, reducing, 4" str.
Press, No. 1½ Bliss toggle drawing.
Presses, No 54 Toledo trimming.
Punch, Royersford d. e., cap. 1"x1½", arch. jaw, 18" throat.
Punch, Wickes, 48" thrt, cap. 1½"x1".
Radial drills, 4' & 5' Prentice plain.
Radial drill, 5' American plain, t. a., motor drive.
Radial drill, 4' American pl., belt dr.
Reduction gear, Foote, 50 to 1.
Saw, American metal swing, m. d.
Shaper, 20" Steptoe b. g. crank.
Shaper, 24" Cincinnati b. g. crank.

Our warehouse is full of bargains. What have you for sale?

FOR SALE BY

Bennett Machinery Co., - 30 Church St., New York City

Drills, 26", 28" & 32" Barnes upright.
Friction saw, No. 3 Ryerson, d. c. motor.
Guillotine bar shear, No. 2 H. & J.
Lathe, 28/48"x12' Harrington, gap.
Lathe, 30/52"x12' removable gap.
Lathe. 20"x15' Reed, 11' centers.
Miller, No. 3 LeBlond plain, $625.
Punch and shear, No. 2 L. & A. double end, 24", 1" thru 1". $1000.
Radials, 6' Pond, 4' Dreses, cone.

FOR SALE BY

Edward L. Klauber, - 320 South Third St., St. Louis, Mo.

Bolt cutter, Little Giant, 1" cap.
Bolt cutter, National, ⅞" cap.
Bolt cutter, National, 3⅛" cap.
Bolt cutter, Landis, 2" cap.
Buffers, New Britain, drop head.
Drill, 42" wall type radial.
Drill press, 24", b. g., s. h., t. a.
Grinder, No. 2 Cinti univ. 12x36.
Grinder, B. & S. No. 3 cut. & reamer.
Grinder, No. 11 Brown & S. plain.
Grinder. No. 10 Besly disc, ring wh.
Hydraulic press, 7½ ton.
Lathe, 16x5 Hendey, q. c. g., t. a.
Lathe, 14"x6' Prentice.
Lathe, 16"x8' Monarch, d.b.g.,q.c.g.
Lathe, 16"x8' Lodge S., q.c.g.,d.b.g.
Lathe, 16"x8' South Bend, plain chge.
Lathe, 21"x8' LeBlond, q c.g., d.b.g.
Lathe, 26x10 C. M. C., d. b. g.,q.c.g.
Ovens, japanning, 10'x12'x8'.
Planer, American 30"x30"x8'.
Punch press, No. 2 Rockford.
Shaper, 16" Smith & Mills.
Turret lathe, Warner & S. No. 2.

FOR SALE BY

Carlson Machinery Co., - - - Davenport, Iowa

GRINDERS

6x32" Norton plain.
No. 65 Heald cylinder.
No. 2 Gardner disc.
No. 8 Besly disc.
No. 14 Besly disc.
No. 1 Cincinnati univ. tool & cutter.
No 2 Oakley univ. tool & cutter.
Grand Rapids Yankee twist drill.
12" Marschke elec. grinder stand.
24" Norton snagging grinder.

LATHES

13"x5' Shepard, geared hd., q. c.
14"x6' Hendey, geared head, q. c. taper attach , draw in attach.
14"x8' Hendey, yoke head, q. c., relieving attach., draw-in. attach.
15"x6' South Bend.
15"x6' Rockford semi q. c.
16"x8' Canedy-Otto, b. g., semi q. c.
18"x6' Lodge & Shipley, q. c.
18"x6' American, taper attach., q. c.
38x60 Lo-swing.
No. 4 Warner & Swasey turret lathe. universal chucking equipment.

GEAR CUTTING MACHINES.

No. 2 Adams.
No. 12 Barber-Colman.
24" Schuchardt & Schutte.
72"x20 Cincinnati.

DRILL PRESSES

16" Canedy-Otto, lever feed.
20" Silver, b. g.
21" Canedy-Otto, b. g., power feed.
21" Canedy-Otto, wheel & lever fd.
No. 24 Canedy-Otto, bench.
24" Hoefer 4-spindle.
⅞" Demco ball bearing, 7" overhang.
⅞" Sipp ball bearing, 8" overhang.
25" Snyder, sliding head, with tapping attachment.
30" G. & E. sliding head.
4' Hammond sensitive radial, with tapping attachment.

MILLERS

No. 1 Van Norman hand.
No. 1 Rockford plain.
No. 1½ Rockford plain.
No. 2 Cincinnati universal.
No. 2B Brown & Sharpe, s. p. d.
No. 34 Ohio plain, dividing head.

MISCELLANEOUS

Arbor press, No. 3 Greenerd.
Boring mchc , No.2 Rockford horiz.
Brake. 72" Peck, Stow & W., hand.
Keyseater, No. 0 Mitts & Merrill.
Planer, 30x30x7 Fitchburg, 1 head.
Planer, 30x30x7 Detrick & Harvey, o. s., 1 head.
Press, No. 18 Bliss. o. b. i.
Press, No. 20 Swaine, o. b. i.
Press, No. 85 Consolidated, geared.

FOR SALE BY

Severin-Tripp Machinery Co., 25 Church St., New York, N. Y.

Bending roll, 14' 10", 1½" plate.
Boring mill, 53" Niles.
Boring mill, 72" Niles, m. d.
Brake, 8' Ohl, 18 gauge.
Crane, 5-ton, 48' span, 140' runway.
Crane, 5-ton, 52' span, 170' runway.
Gear cutter, 36x9 Gould & Eberhardt.
Grinder, knife, 120".
Hammers, Nos. 3 & 4 Nazel.
Lathe, 18"x 6' Champion.
Lathe, 24"x12' Prentice, geared hd.
Lathe, 30"x12' American.
Lathe, 35"x12' Bridgeford.
Lathe, 42"x22' Bridgeford.
Lathe, gap, 18"x36"x8' Fay & Scott.
Lathe, gap, 18"x36"x10' Putnam.
Miller, No. 3 Kempsmith universal.
Mill, 36" Bullard side head.
Pipe machines, 6 & 8 Saunders.
Pipe machines, 4" Bignall & Keeler.
Planer, 36"x16' Pond. m. d., d. c.
Planer, 36"x36"x26' Pond.
Planer, 42"x42"x26' Pond.
Planer, 72"x72"x30' Sellers, b. d.
Punches, No. 4 Hilles & Jones, 48" throat, (2).
Punch, No. 4 Hilles & J., dbl. end.
Radial drill, 30" Gang.
Riveter, Allen.
Riveters, Hanna, (3).
Rotary planer, Cleveland.
Shear, No 60 Quickwork.
Straight ning rolls.
Turret lathes, 21" Gisholt, (2).

FOR SALE BY

The Randle Machinery Co., 1733 Powers St., Cincinnati, Ohio

Only Real Bargains of the Day!

Automatic, 4-spindle Acme	$ 200.
Bolt cutter, rebuilt, 4" Acme, m. d.	475.
Boring mill, Niles camel back, spindle type, b. d.	300.
Cut-off saws, Burke 20", (2), each	125.
Drill, 7' Niles universal, m. d.	450.
Gap lathe, used 18x30x10' LeBlond, q. c.	900.
Lathe, 24"x24' Fifield, l. c., used, net	1200.
Lathe, 28" Gisholt, m. d., 3½" bore	350.
Lathe, 34" Gisholt, m. d., 4½" bore	450.
Lathe, rebuilt 18"x6' engine lathe, l. c.	175.
Lathe, rebuilt 24"x8' Schumacher-Boye engine lathe, l. c	375.
Planer, used 30x30x8' Cincinnati, 2 heads, net	1500.
Radials, used 3' Carlton sensitive plain, (2), each	375.
Shaper, used 20" Kelly plain crank, net	375.
Shaper, rebuilt 25" Smith & Mills, b. g.	875.
Turret lathe, used 24" Gisholt, 6¼" bore, b. d.	900.

Also many other tools of all kinds. Send us your inquiries.

FOR SALE BY

Taylor-Hall Welding Corporation, 5 May St., Worcester, Mass.

WELDERS.

Spot and Butt Welders

We offer rebuilt and fully guaranteed spot and butt welders as listed below:
One No. 0 Toledo butt welder, capacity ⅛" round stock.
One No. 2A Thomson automatic butt welder, capacity No. 8 wire, 1000 welds per hour.
One No. 2A Thomson hand butt welder, capacity ⅛" round stock.
One No. 3 Toledo butt welder, capacity ⅜" round, 2"x⅜" flat stock.
One No. 10-A-6 Thomson butt welder, capacity ⅜" round.
One No. 20-A-10 Thomson butt welder, capacity 1½" round or 2" pipe.
One No. 7C Toledo butt welder, capacity ½" round or 2½"x½ flat.
One No. 40-A-2 Thomson butt welder, capacity 2" round.
One No. 80-A-1 Thomson butt welder, capacity 1"x2" flat stock.
One No. 21 Thomson automatic butt welder, capacity one thousand ⅛" diameter wire rings, etc., per hour.
One No. 133 Thomson spot welder, 10 k. w.
One No. 137 Thomson spot welder, 10 k. w.
One No. 240 Thomson spot welder, 20 k. w.

FOR SALE BY

Clark Machinery Co., 1235 St. Clair Ave., Cleveland, O.

The following are bargains in every sense of the word:

Grinders, Pratt & Whitney 6"x48" plain cylindrical, (2), each	$ 250.
Grinder, No. 6 Bryant chucking grinder	150.
Lathe, 16"x8' Walcott q. c. g. engine lathe, with double back gears and power feed to turret on bed	450.
Milling machine, Cincinnati 18" automatic	300.
Milling machines, Brown & Sharpe No. 12 plain, with pump, (4), each	125.
Milling mches., Kempsmith No. 32 manufacturing, with pump, (3) each	125.
Milling machines, Hendey manufacturing, with pump, (5), each	125.
Planers, 26"x26"x 7' Gray	600.
Planers, 28"x28"x 8' Gray	675.
Planers, 42"x42"x10' Gray	2000.
Screw machines, Foster No. 6, with power feed to turret and power feed to cut-off and bar feed, (4), each	500.

FOR SALE BY

Economy Machinery Co., 428-430 E. Pearl St., Cincinnati, Ohio

Rebuilt Machinery

Brakes, Niagara power, 72", hand and foot, 10', 8', 6', 4' & 3½'.	
Drill, Baush 16-spindle	$400.
Gear shaper, Fellows 3n", $250; Steptoe 12"	150.
Lathe, 20"x8' U. S., 5-step, s. b. grd., q. c. g. box, c. r. & c. s.	375.
Lathe, 24"x12' L. & S., s. p. drive, q. c. gr. box, c. r. & c. s.	600.
Lathe, 26"x10' Walcott, 3-step, d. b. grd., c. s.	600.
Millers, LeBlond No. 3, 3-step, d. b. g. gr. box, c. s. support	500.
Miller, Cincinnati No. 4, same, with vertical attachment	600.
Miller, Cincinnati No. 5, motor drive	1200.

Pipe machines, with Landis heads, 2" double, 3" single.
Punches and shears, O. C. ⅝x⅝; No. 4 L. & A., ½x½; No. 5 L. & A. ⅝x⅝.
Square shears, E. & K. 52", 48" foot power, 96", 52", 36" & 30" Lenox, ⅜" throatless shear.
Stamping presses, 10 assorted.

Let us know your wants.

Wood-Working Machinery

For a large list of new and used wood-working machinery and allied equipment, consult the **Wood-Working Machinery List,** a publication similar to this but devoted to the advertising of saw-mill and wood-working machines. A copy may be had free on application to the publisher.

Hitchcock Pub'ishing Co.,
508 So. Dearborn St., Chicago, Ill.

MOTCH AND MERRYWEATHER MACHINERY CO
THE
CLEVELAND
DETROIT CINCINNATI
PITTSBURGH

Machines of Quality

BORING MILLS

1—No. 0 Giddings & Lewis Horizontal.
1—54" Colburn Vertical Boring Mill Rapid Traverse.
1—24" Bullard Vertical Turret Lathe (New Era Type).
3—36" Bullard Vertical Turret Lathes (New Era Type).

TURRET LATHES

1—2-A Warner & Swasey.
2—No. 6 Warner & Swasey.
2—No. 4 Warner & Swasey.

MILLING MACHINES

2—No. 4 Cincinnati High Power (Rapid Traverse).
1—No 4 Cincinnati Universal.
2½-B Milwaukee Vertical.

GEAR CUTTERS

1—No. 12 Barber Colman Gear Hobber.
2—18-H Gould & Eberhardt Gear Hobbers.
4—36-S Gould & Eberhardt Spur Gear Cutters.
1—5" Gleason Bevel Gear Generator.
1—11" Gleason Bevel Gear Generator.

DRILL PRESSES

4—28" Cincinnati-B., Sliding Hd.
5' Cincinnati Bickford Radial.

SHAPERS

2—16" Gould & Eberhardt.
1—24 American Shaper.
1—28 American Shaper.

LATHES

2—12x5 Hendey Tool Room.
1—14x6 American Lathe.
2—20x10 American Geared Hd.
2—42x32 American, triple geared, 2 carriage, motor drive lathes, 35 H. P. motor.

GRINDERS

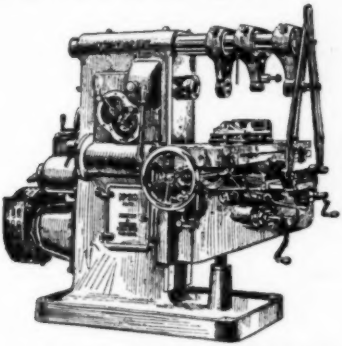
1—14" Pratt & Whitney Vertical Surface Grinder.
1—84" Diamond Face Grinder.
1—Thompson 10x36 Universal Grinder.
1—No. 2 Norton Cutter Grinder, Full Universal Equipment.
1—LeBlond Cutter Grinder.
10—12" Heald Rotary Surface Grinders, with Magnetic Chuck.

This is a partial list of our equipment. In addition to above list we have several hundred machines going through the process of rebuilding.

Let us send you one of our circulars describing our methods, listing our stock and picturing our plant.

Upon receipt of your address we will forward these circulars periodically.

Factory Rebuilt Milwaukee Milling Machines



We have left a few of these excellent bargains in the styles listed below. Every machine has been completely disassembled, re-scraped, and new parts put in wherever necessary. A K & T rebuilt is thoroughly tested and carries the same accuracy guarantee as a new machine. First come, first served. Better write at once.

2B Plain—Single Overarm **3B Plain—Double Overarm**
2B Univ.—Double Overarm **4B Plain—Double Overarm**
3B Vertical **4B Vertical**
3B Plain—Single Overarm

SUBJECT TO PRIOR SALE

Address: Rebuilding Department

MILWAUKEE MILLING MACHINES

KEARNEY & TRECKER

CORPORATION

5926 National Ave., Milwaukee, Wisconsin

Selections From OUR Warehouses

SHAPERS AND PLANERS

26" Kelly, heavy duty, back geared, new	$ 825.
20" G. & E. good condition, single geared	395.
20" Hendey, good condition	230.
18" Hollingsworth, heavy-duty, back geared, new	590.
16" Smith & Mills, back geared	345.
16" Barker, single geared, good condition	260.
6x6 Pratt & Whitney, good condition	115.
32x32x14' Pond Planer, good condition	985.
32x32x14' Grey Planer, motor drive, 2 heads on rail, excellent condition	1230.
24x24x6' Pratt & Whitney Planer, like new	525.
No. 6 Fellows Gear Shaper, new, 52000 serial number	485.

MILLING MACHINES

No. 6 Becker, Vertical, good condition	$ 795.
No. 3 Cincinnati Vertical, single pulley drive, sliding head, good condition	795.
No. 2 Cincinnati Vertical, practically new	695.
No. 4 LeBlond Plain, heavy-duty, excellent condition	895.
No. 4 Cincinnati plain, good condition	695.
No. 3 LeBlond Plain, heavy-duty, good condition	590.
No. 3 Brown & Sharpe Plain, good condition	630.
No. 13 Brown & Sharpe Manufacturing Miller, good cond.	290.
No. 2 Cincinnati Plain, good condition	590.
No. 2 Cleveland Plain, single pulley drive, like new	745.
No. 1½ Ohio Plain, good condition	290.
12x48 Cincinnati Automatic, good condition	450.

PRESSES

No. 21 Bliss, o. b. i., good condition	$ 390.
No. 20 Bliss, o. b. i., like new	325.
No. 20 Bliss, o. b. i., good condition	275.
No. 19 Chas. Leffler, o. b. i., like No. 19 Bliss	185.
No. 4½ Niagara, o. b. i., like new, same as No. 20 Bliss	270.
No. 30 Perkins, o. b. i., like No. 18 Bliss	115.
No. 41 Toledo Horning Press, good condition	145.

A. R. Marsh Machinery Company,

For our financial responsibility

—Every Tool a Real Buy!

No. 534 Max Ams, straight side, 6" stroke	$ 225.
No. 73 Bliss, straight side, 20" bet. housings, 4" stroke	335.
Cleveland Straight side, 3½ Ton	325.
Double Crank Cleveland, 30" bet. housings, 6 Ton	650.

DRILLS

36" Reed-Prentice, tapping attachment, new	$ 495.
28" Superior, power feed, back gears, sliding head	270.
25" Snyder, power feed, back gears, sliding head	215.
24" Barnes, power feed, back gears, sliding head	175.
22" Aurora, sliding head, back gears, tapping attach.	205.
20" Silver, plain, good condition	50.
20" Cincinnati, tapping attachment, good condition	95.
20" Barnes, camel-back, all geared, good condition	135.
20" Sibley & Ware, good condition	55.
20" Aurora, back geared, power feed, tapping attach.	125.
16" Sipp, ball bearing, good condition	150.
16" Henry & Wright ball bearing, good condition	140.
8 Sp. multiple, heavy-duty Fox; No. 3 tapers; up to 1" in steel; good condition	565.
4 Sp. Allen, Ball bearing, new	565.
4 Sp. 22" Rockford, sliding head, power feed	380.
30" Dreses Radial, cone drive, good condition	235.

GRINDERS

No. 14 Brown & Sharpe, plain, 12x48	$ 470.
No. 11 Brown & Sharpe, plain, 8x32, like new	390.
No. 10 Brown & Sharpe, plain,	135.
No. 13 Brown & Sharpe, tool and cutter	365.
No. 1 Norton tool and cutter, new	285.
No. 75 Heald, Internal	280.
6x32 Norton, plain, good condition	235.
12x36 Diamond Surface Grinder, excellent condition	465.
14x36 Pratt & Whitney Vertical Surface, good condition	495.
16x48 Landis Crankshaft, like new	1250.

(Continued on next Two Pages)

4900 West 73rd St., Cleveland, Ohio

See Bradstreet's September issue

Selections From OUR Warehouses

Continued from Preceding Pages

SCREW MACHINES AND TURRET LATHES

3¼x36 Cincinnati Acme, like new	$ 465.
3x36 J. & L. latest type, geared feed, excellent cond.	330.
3x36 J. & L. latest type, 2 spindle, excellent condition	550.
No. 6 Warner & Swasey, excellent condition	850.
No. 4 Warner & Swasey, excellent condition	680.
No. 4 Warner & Swasey, good condition	590.
No. 4 Warner & Swasey, good condition	450.
No. 2 Warner & Swasey, good condition	155.
No. 4 Bardons & Oliver, excellent condition	350.
No. 2 Foster, good condition	170.
No. 1 Garvin, new	135.
2" Model B Cleveland Automatic	390.
No. 2 T. M. Smith, good condition	95.
1¾" 4 spindle Gridley Automatic, good condition	790.
1¼" 4 spindle Gridley Automatic, excellent condition	720.
No. 24 New Britain, 5 spindle, excellent condition	750.

LATHES

42x12 Gleason, face plate drive, 36" chuck, heavy.duty	$ 685.
32x16 Pittsburgh, plain change gears, compound rest	560.
24x12 Boye & Emmes, quick change gears, ex. cond.	795.
24x12 Boye & Emmes, loose change gears, ex. cond.	390.
24x12 Bradford, loose change gears, taper attach. ex. cond.	335.
21x10 LeBlond heavy-duty, friction head, double back gears, quick change gears, excellent condition	830.
21x8 LeBlond heavy-duty, single pulley drive, q. c. grs.	790.
18x12 Hendey, quick change gears, taper att. good cond.	485.
18x10 Hendey, quick change gears, taper attach., excellent condition, latest model	895.
18x9 Reed Lathe, good for repair shop	130.
18x8 Walcott, quick change gears, like new	490.
18x8 Prentiss Tool room lathe; single pulley drive, quick change gears, apron reverse, excellent condition	695.
16x10 South Bend, loose change gears, good condition	265.

A. R. Marsh Machinery Company,

es—Every Tool a Real Buy!

16x8 South Bend, taper attachment, like new	$ 275.
16x6 LeBlond, quick change gears, good condition	285.
16x6 Rockford, loose change gears, good condition	165.
14x6 Hendey, taper att., quick change gears, good cond.	335.
14x6 LeBlond, quick change gears, good condition	280.
14x6 Walcott, quick change gears, good condition	280.
14x6 Prentiss, loose change gears, good condition	135.
14x6 Monarch, plain change gears, good condition	125.
14x6 Monarch, quick change gears, good condition	195.
14x6 Monarch loose change gears, good condition	110.
14x6 Reed, without gears, otherwise good condition	40.
12x4 South Bend, practically new	125.
12x6 Reed without gears, otherwise in good condition	50.

MISCELLANEOUS

250 lb. Beaudry Power Hammer, good condition ex. for blacksmith shop	$ 175.
King Bridge punch and shear, 12" thr. arch. jaw, 1½" thru ¾	190.
4" Higley Cold Saw, good working order	85.
5" Cochran-Bly Cold saw, like new	190.
5' Keufel & Esser Automatic Blue Print Machine with motor; perfect condition	270.
38" Wright Metal Cutting Band Saw, like new	180.
30" Houghton & Richards Metal Cutting Band Saw with 12 high speed saws	115.
2 cylinder 8x8 Curtis Air Compressor with tank, latest type, perfect condition	265.
2 Sp. ¾" Acme Bolt Cutter with lead screws, used 3 days	370.
2 Sp. ¾" Acme Bolt Cutter, excellent condition	290.
2 Sp. 1½" Morgan Bolt Cut., 6 sets new chasers, good cond.	235.
No. 1 LaPointe Broach, good condition	165.
2 No. 3 LaPointe Broaches, good condition, $145 and	225.
No. 4 LaPointe Broach, good condition	290.
No. 55 Atlas Power driven Arbor Press, good condition	185.
No. 2 Davis Keyseater, good condition	98.
No. 00 Baker Bros. Keyseater, good condition	85.
20 H. P. Motor, a. c., 220 v., 60 cy., comp. with starter, rails & pulley	190.

4900 West 73rd St., Cleveland, Ohio

Lowest Prices!

and The World's Greatest Stock!

LATHES

48"x50' Amal. h. d. gun boring.
48"x40' Pond triple geared.
48"x16' Putnam h. d. production.
36"x32' Bridgeford grd. hd., q. c. g.
30"x16' LeBlond h. d., q. c. g.
24"x12' American, q. c. g.
24"x 8' LeBlond, q. c. g.
20"x10' Davis, q. c. g.

PLANERS

60"x60"x18' Pond 2-heads.
48"x48"x20' N. B. P. 2-heads.
48"x48"x 8' Sellers 1-head.
36"x36"x21' G ay 2-heads.
30"x30x"20' Wood. & Powell 2-hds.
22"x22"x 5' Gray, 1-head.

SHAPERS

30" Norton.
24" Steptoe.
20" Smith & Mills.
16" Stockbridge.

MILLERS

24"x24"x12' Ingersoll horiz. slab.
No. 3 Brown & Sharpe vertical.
No. 2 Brown & Sharpe universal.
No. 5-C Becker vertical.
No. 7-H Becker Lincoln type.
No. 2½ Hendey Lincoln type.

RADIAL DRILLS

30" American, t. s.
36" Gang.
6' Dreses.
4' Dreses.

GRINDERS

20"x54" Diamond wet surface.
16"x68" Landis crankshaft.
16"x66" Landis universal.
16"x36" Landis universal.
10"x48" Landis universal.
12"x36" Fitchburg plain.

STEAM SHOVELS

95-Ton Bucyrus R. R. type.
70-Ton Bucyrus R. R. type.

SLOTTERS

10" Putnam.
16" Betts.
20" Niles.

PUNCHES and SHEARS

48" Throat Cleveland 1" cap.
42" Whiting 1" cap. arch. jaws.
36" Thrt. Cleveland 1" cap. arch. jaws.
18" Thrt. Cleveland ½" cap. arch. jaws.

PUNCH PRESSES

No. 55 D. G. G. Ferr. dbl. grd., 16" Str.
No. E-57 Ferr. dbl. grd., 2½" Str.
No. 75½ Bliss straight side, 6" Str.
No. 6 American Can Co. style-N, o.b.i.
No. 256 Toledo dbl. crank, s. s., 4" str.
No. 58 Toledo s. s. trimming.
No. 5 Crosby Stiles type, 2½" str.

MISCELLANEOUS

12' L. & A. style-A Forming Press.
750-1000-1500 ton Mesta Presses.
365-Ton Camden Joggling Press.
5-Ton Whiting El. Crane, 35' span.
10-Ton Morgan El. Crane, 73' span.
19x24 American Mogul type, 63-ton.
Standard Gauge Locomotive.
16x24 Vulcan 50-ton Saddle Tank.
6000 Lb. Chamb. D. F. Stm. Hammer.
2500 Lb. Chamb. D F. Stm. Hammer.
2500 Lb. Bliss Board Drop Hammer.
No. 4-B Wms. & White Bulldozer.
2" Curtis Pipe Thread. Machine.
6" Bignall & Keeler Pipe Th. Mche.
Baush 8-Spindle Multiple Drill.
Nos. 2, 3, 4 Wood Tilt. Tur. Lathes.
7500 to 30000 gal. Oil Stor. Tanks.

Machinery Bulletin No. 209, describing our complete stock, mailed free on request.

HARRIS BROTHERS COMPANY

35th & Iron Sts., CHICAGO

Real Bargains
Some Brand New

LATHES

14"x 6' Worcester Semi Quick Chge., New, $275.
16"x 8' Morris Geared Head, New.
18"x 8' Morris Q. C., New, $750.
18"x10' Morris Q. C., New.
20"x12' LeBlond Single B. G.
21"x 8' LeBlond H. D. 220 v., D.C.
22"x10' Morris Geared Head, New.
22"x12' Morris Q. C., New.
26"x16' Davis, Single B. G.
32"x17' Pond Single B. G., Cone.

SHAPERS & SLOTTERS

16" S. G. Stockbridge, New, $400.
16" B. G. Stockbridge, New, $600.
26" Cone Stockbridge, New, $1175.
26" Bement Dbl. Traveling Hd., Mtr.
15" Bement Slotter 220 v., D. C.
19" Putnam Slotter, Belt.

RADIALS

5' Niles Universal Gear Box.
5' Niles Semi-Universal Gear Box.
5' N. B. P. Univ., "Right Line," 220 v., D. C.
6' Niles Semi-Universal Gear Box.
6' Niles Full Universal Gear Box.
6' Niles Universal, Motor.

BORING MACHINES

60"—4" Bar, Niles Horiz. B.&D.
5" Bar Niles Floor Borer.
18" P. & W. Side Head Mill.
42" Niles B. & T. Mill.
44" Niles, with R. H. Turret Head, 220 v., D. C.

PLANERS

26"x26"x 6' Niles, 1 Head.
26"x26"x 6' Gray, 1 Head.
30"x30"x 8' Niles-B.-P., 2 Heads, Rev. Motor.
32"x32"x10' Niles, 2 Heads.
32"x32"x12' Pond, 2 Heads, Motor.
36"x36"x10' Niles, 4 Heads.
38"x38"x12' Niles, 2 Heads.
38"x38"x16' Niles, 3 Heads.
42"x42"x12' Niles, 4 Heads.
42"x42"x14' Pond, 4 Heads, Motor.
48"x48"x16' Pond, 4 Heads.
48"x48"x20' Pond, 4 Heads, M. D.
96"x72"x42' N-B-P Rev. Motor.
10'x10'x36' Betts, Motor, 4 Heads.
36"x36"x10' N. - B. - P. Frog and Switch, Rev. Motor.

PUNCHES & SHEARS, AND MISCELLANEOUS EQUIPMENT

¾" Cap. L. & A. Plate Shear, Motor.
1" x 1" Cap. 48" L. & A. Punch and Shear, Motor.
⅞" x ⅝" Cap. 12" Throat L. & A. Horizontal Punch.
185 lb. Motor Driven Air Hammer.
800 lbs. Bement Sgl. Frame Hammer.
800 lbs. Bement Board Drop.
No. 2 Mitts & Merrill Keyseater.
48" B. & S. Spur Gear Cutter.
2" Cox Lever Grip Pipe Machine, D. C. Motor.
5" Whiton Revolving Centering Mch.
DA2-Wilson, 220 v., D. C. Welder.

The Niles Tool Works Company
Division Niles-Bement-Pond Company
Hamilton, Ohio

New York, 111 Broadway.
Birmingham, Brown-Marx Bldg.
Boston, 125 Purchase St.
Chicago, 564 W. Monroe St.
Cincinnati, 538 West Fourth St.
Cleveland, 1433 East Twelfth St.
Detroit, 5936 Cass Ave.
Los Angeles, 454 East Third St.
Philadelphia, 2415 Chestnut St.
Pittsburgh 1115 Empire Bldg.
Rochester, 89 East Ave.
St. Louis, 516 North Third St.
San Francisco, 917 Howard St.

Quality Machine Tool

RADIALS AND UPRIGHT DRILLS

7' American Tool Works, gear box drive.
5' Dreses, gear box drive.
5' Niles-Bement-Pond, semi-universal, gear box driven.
4' Bickford, gear box drive.
4' Fosdick, cone pulley drive.
No. 310 Baker Bros. Heavy Duty.
No. 614 Baker Bros. Heavy Duty.
No. 519 Baker Bros. Horizontal.
24" Cincinnati Bickford Upright Drill, cone pulley drive.
26" Prentice Bros. Upright Drill cone pulley drive.
15" Avey No. 2 High Speed Ba Bearing Drill.
No. 11 Pratt & Whitney Multipl Drill Press.
3-spindle Barnes 26" Gang.
Nos. 1 & 3 Barnes Horiz. Radial.

ENGINE LATHES

30"x12' LeBlond, q. c., hvy. duty.
24"x10' Boye & Emmes., q. c.
21"x10' LeBlond, q. c., hvy. duty.
20"x12' Hendey, tie bar hd., taper.
18"x 8' Lodge & Shipley, q. c.
18"x 8' Mueller, q. c.
18"x 8' Prentice Bros., geared head, quick change.
16"x 8' LeBlond, quick change.
16"x 6' Hendey, q. c., tie bar. hd
16"x 6' Hamilton, semi-quick c.
16"x 6' Cincinnati, quick change
14" x6' Seneca Falls Star qk. cha
9x12" Porter Cable Mfg. Lathes.
17"x8' LeBlond Rapid Production Mfg. Lathes.

TURRET LATHES AND SCREW MACHINES

24" Gisholt Turret, late type, 6¼" hole in spindle.
3"x36" Jones & L. Flat Turret.
No. 6 Warner & S. Turret Lathe.
No. 4 W. & S. Univ. Turret Lathe.
No. 4 Warner & S. Turret Lathe.
No. 4 Brown & Sharpe friction hd. wire feed screw machine
No. 4 Bardons & O. Turret Lathe.
No. 2 Warner & Swasey Turret Screw Machine.
⅝" Bardons & O. Hd. Screw Mch
2" Pratt & Whitney Friction head Turret Lathe.
2x12" Garvin Turret Lathe.
2¼" Acme Flat Turret Lathe.
2½" Pratt & W. Flat Turret Lathe
No. 3 Foster Turret Screw Mche

MILLING MACHINES

No. 4 Brown & Sharpe Universal.
No. 3 LeBlond Universal.
No. 2 LeBlond Universal.
No 1½ R. K. LeBlond universal,
No. 1½ Rockford Universal.
No. 1 Cincinnati Universal.
No. 5 R K. LeBlond plain, s. p. d.
No. 3-B Heavy Brown & Sharpe plain, single pulley drive.
No. 3 Cincinnati plain, cone type.
No. 2 Kempsmith pl., cone type.
No. 2 Cincinnati plain, cone type
No. 2 Kempsmith pl., cone type.
No. 2 B. & S. plain, cone type.
No. 1 Knight Milling and Drilling Machine.
No. 0 Cincinnati plain, cone type
No. 3 Brown & Sharpe vertical single pulley drive.
No. 1½B Milwaukee Vertical.
No. 3 Becker Vertical.
No. 5 Becker Vertical.

SHAPERS AND PLANERS

25" Smith & Mills Back Geared Crank.
24" Smith & Mills Back Geared Crank.
24" Steptoe Geared.

EASTERN MACHINERY CO

—Offered by Eastern

24" Hendey Friction Geared.
20" Rockford Back Geared Crank, single pulley.
20" Queen City Back Geared Crank.
16" John Steptoe B. G. Crank.
15" American Tool Works Plain Crank
26"x26"x8' American Tool Works Planer, one head on rail.
36"x38"x18' Niles Tool Works Planer, two heads on rail.
42"x42"x12' G. A. Gray, two heads.

GRINDERS AND GEAR MACHINERY

No. 2 Cincinnati Plain Grinder, cap. 12"x36", practically new.
9"x30" Modern Plain Selt contained Grinder, 98% new.
No. 70 Heald Internal Grinder.
No. 60 Heald Cylinder Grinder.
6x15" Fitchburg Plain Cylindrical Grinder.
Nos. 1 & 3 Brown & Sharpe Universal Grinders.
No. 1 Diamond Universal Grinding Machine.
No. 1 R. K. L-Blond Universal Tool and Cutter Grinder.
No. 6 Rivett Internal Grinder.
No. 2 Oakley Cutter and Tool Grinder.
No. 6A Cincinnati Automatic Gear Cutter, capacity 72" gears.
No. 5A Cincinnati Automatic Spur Gear Cutter, capacity 60" gears.
No. 5 Brown & Sharpe Autom-tic Spur Gear Cutter cap. 60" gears.
No. 12 Barber-Colman Gear Hobbers.
No. 12 Brown & Sharpe Automatic Spur and Bevel Gear Cutter.
18x12" Gould & Eberhardt Automatic Gear Hobbers.
No. 6 Fellows Gear Shaper.

MISCELLANEOUS

24" Bullard Vertical Boring Mill, rapid production type.
30" Colburn Vertical Boring Mill.
2" Landis Dbl Spindle Bolt Threading Machine, with lead screw attach.
1½" Landis Double Spindle Bolt Threading Machine, lead screw.
1½" National Dbl. Sp Bolt Threading Machine, with lead screw attach.
1" Landis Single Spindle Bolt Threading Machine, lead screw.
15-Ton Lucas Power Forcing Presses.
8"x8" Atkins Kwik-Kut, power Hack Saw.
6"x6" Racine Power Hack Saw.
600 lb. Chambersburg Steam Hammer.
No. 3 Baker Bros., Keyseater.
No. 8 Leffler O. B. I. Press.
10' Niagara, Power Squaring Shear, capacity 10 gauge.
No. 2-X Garvin Automatic Tapping Machine.
Nos. 2-A, 3A and 4-A High Speed Hammers.
10x10" Union Steam Pump Co. Single Cylinder Air Compressor.
16"x14" Chicago Pneumatic Tool Co's class N. S. B., Air Compressor.

500 Other Machines in Stock. Write for Stock List

15 E. Pearl St., CINCINNATI, OHIO

Opportunity Knocks Again For the Conservative Buyer

Real Values in Machine Tools—

Planers

72"x54"x24' Pond, 4 heads.
72"x72"x18' Betts, 4 heads.
36"x36"x24' Pond, 4 heads.
36"x36"x12' Woodward & P., 3 hds.
36"x36"x 8' Dietrick & H., openside.
26"x26"x 8' Pease.

Boring Mills

96" Niles, 2 heads.
2—54" Bullard Maxi.
2—42" King.
2—Blomquist & E., horiz., 3¼" bars.

Hammers

5000 lb. Chambersburg.
4000 lb. Chambersburg.
4000 lb. Massillon.
3500 lb. Massillon.
2500 lb. Massillon.
2—800 lb. Waterbury Farrell board.
2—600 lb. Waterbury.

Grinders

10x50 Norton plain.
8x36 Fitchburg.
16x48 Landis crankshaft.
No. 2 Brown & Sharpe universal.
No. 2 Taft Pierce universal.
Heim's Centerless, motor drive.
No. 4 Detroit Centerless, motor drive.
10x30 Webster & Perks universal.

Screw Machines

3¼" Gridley.
1¼" Gridley.
No. 55 National Acme.
No. 53 National Acme.
No. 52 National Acme.
No. 00 Brown & Sharpe.
No. 0 Brown & Sharpe.
2" Cleveland Model B, New.
2" Cleveland Model B.
3¾" Cleveland Model A.
2¼" Cleveland Model A.
No. 20, ⅝"—⅞" Cleveland Model B.
No. 6 Warner & Swasey.
No. 6 Foster.
24" Gisholt, complete equipment.
18" Gisholt, complete equipment.

Lathes

48"x21' Pond, triple grd., motor drive.
44"x45' Putnam, triple grd., motor dr.
40"x14' Alliance Geared Head.
32"x12' No. 3 Pittsb'gh, q.c., h.d., c.dr.
30"x16' Reed, cone drive.
30"x28' Pond, triple grd., motor drive.
24"x16' Whitcomb-Blaisdell, cone dr.
20"x14' Reed, plain change, cone dr.
21"x10' Boye & E., qk. ch., cone dr.
20"x10' Hendey Yoke Head.
14"x 6' Hendey, t. a., qk. ch. collets.
14"x 6' Hendey, t. a., draw-in attachment, reliev. attachment.

Drills

6' Niles Radial.
5' Bickford, t. a., motor drive.
36" Aurora, g. f.
4-spindle Leland-Gifford, ball bearing.
3-spindle Leland-Gifford, ball bearing.
12-spindle Baush Drill.
6-spindle Foote-Burt No. 5 Taper.
No. 2 Colburn, h. p., (New).
No. 25 Foote-Burt.
No. 4 Mueller Radial, s. p.

Milling Machines

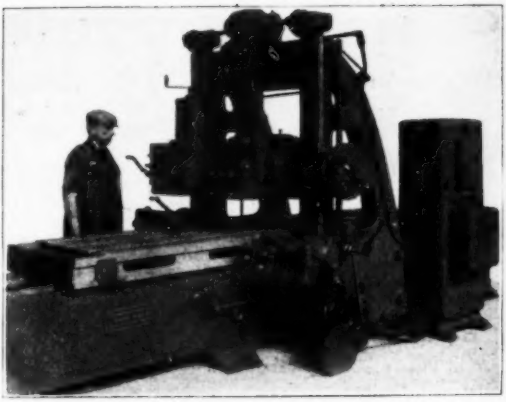
No. 4 LeBlond plain.
No. 3 Brown & Sharpe plain.
No. 2 Brown & Sharpe plain.
Gooley & Edlund slab.
12" Cincinnati mfg. type.
84 Pratt & Whitney Thread Miller.
No. 3 U. S. Hand Millers.
No. 2—13B Brown & S., plain.
2 No. 2 Garvin Duplex.
2M—Potter & Johnston.
2A—Milwaukee, s. p. drive, plain.

Miscellaneous

50-ton 60' Span Alliance Crane.
4½" Acme Bolt Cutter.
Hendey Centering.
36" Fellow's Gear Shaper.
18" Gleason Bevel Gear Generator.
4-Spindle Moline No. 1 Hole Hog.
60" Gould & Eberhardt Gear Cutter.
30" Schuchardt & S. Gear Hobber.
3" National Bolt Cutter.
No. 20 Bliss Punch Press.

The EMPIRE MACHINERY EXCHANGE CO., Inc.

***Offices and Warehouses:* 2261 E. 14th St., Cleveland, Ohio**



Planers

Niles-Bement-Pond heavy types, with complete electric reversing drive and four heads, new or slightly used, at bargain prices.

36"x36"x14'	36"x36"x16' NEW
36"x36"x26' NEW	42"x42'x26'
42"x42"x30'	48"x48"x16'

50"x36"x22' heavy widened type.

LATHE, Niles-Bement-Pond ***NEW*** 36"x16', triple geared.

MILLERS, No. 3 Heavy and No. 2 Heavy Brown & Sharpe, motor drive.

GEAR CUTTERS, two No. 4 Brown & Sharpe.

Specifications, prices, photographs on request

A. F. STRAFER, 30 Church St., NEW YORK

A Rare Bargain

10' Cincinnati Rapid Production Vertical Boring Mill, 2 heads, 84" under rail, arranged for motor drive; rapid traverse, latest type. Excellent condition.

Other Machines

36" Niles Vertical Boring Mill, 2 Heads.
36" Cincinnati Bickford Radial Drill, gear box.
42" American Radial Drill, gear box.
36" Cincinnati Back Geared Drill, tapping attach.
24" Cincinnati Back Geared Drill, comp. table.
6x32 Norton Plain Grinder.
16x48 Landis Crank Pin Grinder, self-contained.
No. 23 Baxter Whitney Cyl. Grinder, like new.
No. 85 Heald Internal Grinders (2).
No. 3 Kempsmith Plain Miller, ex. condition.
Nos. 5B & 6 Becker Vertical Millers.
No. 3 Cincinnati Hi-Power Vertical Miller.
No. 666 Toledo 1000 ton Embossing Press.
16" Gould & Eberhardt B. G. Shaper.
5/8"-7/8" Cleveland Model A Automatic Screw Machines, serials 27360 to 30560.

300 Others, just as good

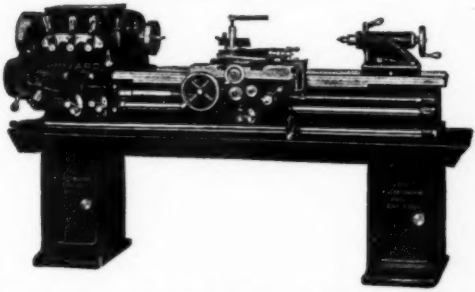
58"x56"x14' Gorton Planer, 4 heads, 35 h. p. G. E. reversing motor, NEW, at a second-hand price.

A. D. White Machinery Co.

108-114 N. Jefferson St., Chicago, Ill.

A Real Opportunity!

To Purchase, below actual cost of manufacture, Fourteen (14) BRAND NEW "WILLARD" Tool-room and Manufacturing Lathes.



This entire line of Lathes has been sold to an Eastern concern who will continue to build them and maintain a complete stock of repair parts.

The following 14 Lathes remain in the Cincinnati Plant, and we are authorized to dispose of them at prices you cannot afford to overlook:

1—13"x 6' Quick-change; 3-step cone; Cabinet Legs; Taper.
3—13"x21" Gap x6' Bed; Semi-Quick-change; 3-step Cone.
1—13"x 7' Quick-change; 3-step Cone; Taper attachment.
2—13"x 6' Quick-change; 3-step Cone; double wall Apron.
1—15"x 6' Quick-change; D. B. G.; 3-step cone.

2—13"x 5' Geared Head Tool-room; Quick-change; Dble. Apron.
2—13"x 6' Geared Head Tool-room; Quick-change; Taper.
1—13"x 8' Geared Head Tool-room; Quick-change; Taper.
1—15"x 8' Geared Head Tool-room; Quick-change; Taper.

Look over your requirements, then get our price on a strictly high-grade, fully-guaranteed machine to replace one of the "antiques" in your plant.

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Below, we list a few machines from our immense stock. We have hundreds more. All are high-grade, guaranteed and real

BARGAINS

LATHES

1—56"-64"x18' Johnston.
1—51"x20' LeBlond.
1—44"x16' Putnam.
4—36"x30' Pittsburgh Geared Hd.
2—30"-34"x12' L. & S. Sel. Hd.
1—28"x16' Bridgeford.
15—25"x12' LeBlond.
1—24"x15' Chard
1—24"x12' Reed Prentice Grd. Hd.
9—24"x11' Cisco.
1—24"x10' American.
10—21"x10' LeBlond.
2—20"x16' American Grd. Hd.
2—20"x12' American Grd. Hd.
5—20"x 8' LeBlond.
1—18"x10' Walcott.
1—16"x 8' Walcott.
1—16"x 8' Monarch.
10—16"x 6' Walcott.
1—14"x 6' Lodge & Shipley.

MILLERS

1—No. 6 Becker Vertical.
3—No. 5-C Becker Vertical.
6—No. 3 Brown & Sharpe Vert.
3—No. 3 Cincinnati Vertical.
1—No. 2B Milwaukee Vertical.
2—No. 4-B Becker Vertical.
3—No. 4 LeBlond Plain.
4—No. 4 Cincinnati Plain.
7—No. 3-B Hvy. Brown & Sharpe.
8—No. 3 Kempsmith Plain
4—No. 2-B Hvy. Brown & Sharpe.
1—No. 2 Kempsmith Plain.
1—No. 1½ LeBlond Plain.

PLANERS

1—72"x56"x36' Cincinnati.
1—42"x42"x16' Rockford.
3—36"x36"x18' Cincinnati
1—36"x36"x12' Woodward & P.
1—36"x36"x12' Gray.
1—30"x30"x14' N. B. P.
1—24"x24"x 6' Hamilton.

PRESSES

1—96-G Toledo Double Crank.
2—No. 56 Ferracute.
1—No. 163½ Toledo Toggle.

BORING MILLS—Vertical

5—72" Gisholt.
1—72" Cincinnati.
1—72" Colburn.
2—42" Colburn.
1—30" Bullard.
1—24" Bullard Rapid Production.

BORING MILLS—Horizontal

1—No. 35 Landis.
1—No. 350 Giddings & Lewis.
7—2" Bar Rockford.

DRILL PRESSES

1—No. 513 Baker.
1—No. 310 Baker.
1—No. 24 Foote-Burt.
2—No. D-2 Colburn.
1—22" Barnes all geared.
16—No. 1-K 8" Henry & Wright.

SLAB MILLERS.

7—22"x24"x12' Ingersoll.
1—24"x24"x 8' Ingersoll.
1—24"x13"x20' Ingersoll.
1—32"x32"x12' Ingersoll.

GRINDERS

4—22" P. & W. Vert. Surf.
1—20"x96" Landis.
1—18"-30"x96" Norton Gap.
3—14"x50" Norton.
3—10"x72" Norton.
2—6"x18" Landis.
2—No. 70 Heald.

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BLISS No. 19 Flywheel Inclinable Press.
BLISS No. 20 Inclinable Flywheel Press.
BLISS No. 27 Knuckle Joint 1000-ton Press.
BLISS No. 31 Overhanging Flywheel Press.
BLISS No. 60½ Rack and Pinion Press.
BLISS No. 61 Flywheel Press, wgt. 2000 lbs.
BLISS No. 73½ Straight Side Geared Press.
BLISS No. 77½ Straight Side Geared Press.
TOLEDO No. 54 Geared Straight Side Press.
TOLEDO No. 55½ Straight Side Trimming Press.
TOLEDO No. 164½ Toggle Drawing Press.
TOLEDO No. 165½ Toggle Drawing Press.
TOLEDO No. 167 Toggle Drawing Press.
TOLEDO No. 168¾ Toggle Drawing Press.
TOLEDO No. 666 Knuckle Joint 1000-ton Press.
CONSOLIDATED No. 56 Flywheel Trimming Press.
CONSOLIDATED No. 65 Geared Straight Side Press.
CONSOLIDATED No. 93 Flywheel Punching Press.
CONSOLIDATED No. 94 Flywheel Punching Press.
CONSOLIDATED No. 165 Flywheel Double Crank.
FERRACUTE EG-6 Geared Straight Side Press.
FERRACUTE D-66 Straight Side Reducing Press.
NIAGARA No. 3 Inclinable Flywheel Press.
NIAGARA No. 4½ Inclinable Flywheel Press.
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LANDIS ½" Single Head Bolt Cutter.
LANDIS 2" Single Head Bolt Cutter.
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HIGH SPEED Riveting Hammers, 3-A, 4-A, 5-A and 6-B.
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HILLES & JONES No. 6½ Gate Shear, Cap. 1", 144" Blades.
HILLES & JONES No. 6½ Gate Shear, Cap. 1, 84" Blades.
HILLES & JONES No. 5 Gate Shear, Cap. ⅝", 150" Blades.
MORGAN No. 294 Gate Shear. Cap. ¾", 132" Blades.
NEWBOLD CIRCLE SHEAR, 24" Throat, Cap. ⅝".
BERTSCH 54" POWER SHEAR, ½" cap. 15' Gap.
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STOCKBRIDGE 24" Motor Driven Shaper.
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BRIDGEPORT KNIFE GR., will grind up to 13" Knives.
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ATTRACTIVE PRICES **MONEY BACK GUARANTEE**

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1—32" Smith Mills Shaper.
1—28" Queen City Shaper.
2—24" Cincinnati, cone.
1—24" Gould & Eberhardt, cone.
1—24" Cincinnati Cone Shaper.
1—20" Ohio Shaper.
1—20" Kelly b. g., cone.
1—20" Smith Mills, b. g.
1—16" American, motor drive.
1—16" Smith Mills, cone.
1—15" Potter-Johnston Shaper.
2—36" Industrial Slotters.
1—36" Bement Slotter.
2—24" Bement Slotters.
1—20" Bement Slotter.
1—15" Newton Slotter.

Automatics

10—2½, 3½ & 4½ Gridley, single spindle, motor drive.
4—1" Gridley, four spindles.
2—¾" Gridley, one spindle.
1—1" Cleveland, single spindle.
2—2" Cleveland, single spindle.
1—2½" Cleveland, single spindle.
2—00 B. & S. Turret Forming.
4—0 B. & S. Automatics.
1—0 B. & S. Cut-off.
1—1⅝"x7" New Britain.

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1—72" x 72" x 18' Detrick-Harvey Latest Type Openside, 3-heads, motor drive.
1—60"x60"x26' D. & H. Open-side.
1—60"x60"x14' Powell heavy.
1—60"x60"x22' N.-B.-P.
1—60"x40"x12' Gleason.
1—42"x42"x26' Pond Planer four heads, rev. m d.
1—36"x36"x20' Woodward-Powell, like new, reversing motor drive.
1—36"x36"x14' N.-B.-P. gear box, 2 heads, belt or m d.
1—30"x30"x18' Cincinnati.
1—24"x24"x12' American, 2 heads.
6—24"x24"x8' 8' and 10' Whitcomb Second Belt Drive Planers.

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3—24" Gisholt, big bore.
2—8½ Bardons & Oliver.
1—2½ Garvin, g. f. h
3—2½"x11" Acme, g. f. h.
3—No. 3 Warner Swasey turret.
1—No 3-A Warner & Swasey tur.
6—3x36 Jones & Lamson flat.
1—3x36 Hartness, double spindle.
6—18" Libby rapid production.
2—2½"x10" Millholland.
1—No. 22 Garvin Monitor.
1—4"x42" Pratt & Whitney.
7/16"x2½" P. & W. turret.
8—2"x26" P. & W. turret.

Vertical Boring Mills

2—24" Bullard R. P., side head.
1—30" Gisholt vertical turret.
1—34" Bertram (Niles) turret.
1—36" Vertical turret and side.
2—42" Bullard, two heads.
1—54" Colburn, two heads.
1—60" Cincinnati, two swivel hds.
1—72" Niles, two swivel heads.
1—84" Pond special X heavy, two swivel heads, gear feeds.
1—84" Niles-Bement-Pond, 2 heads, gear box, motor drive.
1—4" Bar Niles Horizontal Mill.

Miscellaneous

1—C-5 Ferracute Press.
10—Henry-Wright 4-spindle Drills.
XB—2 Ingersoll-Rand Compressor
2-B Gorton Cut-off Machine.
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Rennerfelt Electric Furnaces.
LaPointe Broaching Machines.
8" Bignall Keeler Pipe.
Rockford Balancing and Drilling.
Hilles-Jones Guillotine Shear.
5x5 Carlin Alligator Shear.
No. 0 Eastman Photostat.
10,000 lb. Steam Forging Hammer.
40 lb Bradley Helve.
1000 lb. McDougal Porter single leg forging.
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6c. Per Inch Per Foot—Double Belt, Double Price.

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110 or 220 Volt Universal Electric Drills, ⅜ Cap., $20.

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6—4 Spindle National Acmes, No. 52—
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6—¾" Cincinnati Automatic 5 spindle
Screw Machines, cap. ¾" diameter,
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New & Guaranteed Rebuilt Machine Tools

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2—Baush No. 3, 21 spindle.
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1—New Avey No. 2½,4-sp.hi. sp.
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1—New Britain 1x5 bar.
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2—Taylor & Fenn vertical.
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2—P. & W. 4½x12 Thread.
9—P. & W. 4½x12, 6x48, 6x80 Thread.
4—Lees-Bradner Nos. 4, 6, Thread
25—P. & W. No. 5 auto.
30—P. & W. No. 4, Spline.

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2—Hendey 16x8
1—Lodge & S. 30"x16', grd. hd.
1—Bridgeford 32"x26' g. h., s. p. d.
3—Putnam 42"x44', grd. hd., dbl. carriage, arr. motor drive.
3—Bridgeford 48x50, grd. head, dbl. carriage, arr. motor drive.
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PLANERS
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1—Putnam 48x48x12', 2 heads.

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50—New Pratt & Whitney 7/16", ⅝" wire feed.

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8' x 10 Ga. Capacity

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Model AB Becker Vertical, $375.
Cincinnati Planers, 1—33"x33"x10'; 1—24"x24"x8'.
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Mueller Lathes—18"x8' and 18"x6', q. c.
Detrick & Harvey Open Side Planers, 1—24"x24"x6'; 1—48"x16'.
24"x14' Schumacher & Boye Q. C. Lathes.
24"x12' Lodge & Shipley Q. C. Lathe, patent c. s.
2—26½"x16' Bridgeford Lathes, with taper.
26"x8" Pittsburgh Lathe, q. c., taper, 3 step, d. b. g.
36"x16' Lodge & Shipley Geared Head Lathe.
Norton Cylinder Grinder, 18"x96", $1000.
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42" Bullard Boring Mill, 2 heads, $1450.
6" Landis Pipe Threader.
10'x¾" Set of Hilles & Jones Rolls.
No. 66 Consolidated Geared Punch Press
Shapers—24" Gould & Eberhardt; 16" Steptoe; 15" Kelly.
Lucas Forcing Press, 50-ton cap.
Morse Grinder, 6"x30".
Bliss Presses, Nos. 18 and 20.
No. 5 Toledo Inc. Press, $425.

More than 300 other Machines in Stock. Low Prices.

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1" and 4" Acme Upsetters.
2" National Upsetter, steel bed.
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60, 80, 100, 200 lb. Bradley Cushioned Helve Hammers.
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2000 lb. Erie Steam Forging Hammer.
Pels, Type GEF 30, Comb. Angle & Bar Shears, 6x6x⅝" angles.
Bertsch Plate Shear, 8'x1" cap., rebuilt, condition equal to new.
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1", 1½", 2" single spindle Threading Machines, Acme and Landis.
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2" and 4" Landis Pipe Threading Machines.
1" 8-spindle National vertical semi-automatic Tapper.
¾" & 1½" 6-spindle Acme vertical semi-automatic Tapper.
No. 2 Kempsmith Universal Milling Machine.
No. 19, 52" Besly Vertical Spindle Disc Grinder.
No. 6B High Speed Riveting Hammer.
No. 3 Wilmarth & Morman Surface Grinder, with magnetic chuck.
3—Racine Power Hack Saws, capacity 6x6". 3-speed gear box.
Cincinnati Tu-Speed heavy duty Planer, 30"x30"x14'.
General Electric Centrifugal Compressor, 3300 cu. ft. 1½ lb. pressure. 30 h. p., a. c. motor.
Shore Scleroscope, Model C, complete.

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NEW 3 PHASE MOTORS CHEAP. 3 H. P. $57.50; 5 H. P. $67.50

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12"x 8' Cleveland, geared head.
14"x 6' Carroll-Jamieson, new, q. c.
14"x 6' Hamilton, grd. hd., motor dr.
14"x 6' Monarch, quick change.
14"x 6' Sebastian, c. r., h. d., mtr. dr.
14"x 8' Sidney, double back geared.
14"x 6' Hamilton, style B.
16"x 8' Sidney, double back geared.
18"x10' American, quick change.
20"x 8' American, geared head.
20"x10' Hamilton, rapid production.
22"x10' Greaves & Klusman.
24"x12' Bradford.
24"x24' Prentice, with raising block.
8x60" & 3½x60" Fitchburg, Lo-Swing.

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No. 4 Defiance, 1½" capacity.
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No. 1 Foster, 15/16" capacity, (2).
Warner & Swasey No. 2.
Warner & Swasey No. 4.
Nos. 52 & 56 National Acme auto.

SHAPERS

14" Niles, traveling head.
14" Steptoe, crank.
16" American tool room.
16" O. & S., back geared, new, low price.
16" American back geared crank.
16" Cincinnati b. g., motor drive.
16" Barker back geared crank.
24" O. & S. back geared crank.
24" Gould & Eberhardt b. g. crank.

PRESSES

No. 10 and No. 15 Excelsior, foot.
No. 6-A Willard.
Nos. 3-A & 5-A Willard inclinable.
Nos. 1½, 2, 2½ & 4 Robinson, new.
Emco, bench, for radio parts.
Perkins, dbl. housing, wt. 4,000 lbs.

DRILLS and RADIALS

3' W. E. Gang plain.
No. 1 Baush multiple.
4' Plain Universal Radial Drill Co.
Electric Drills, Black & Decker.
No. 4 Duntley electric.
22", 24", 28", 28" and 32", sliding hd.
6' Ceiling Drill.
4-spindle Reed sensitive.
44" Stover.

MILLING MACHINES

No. 1 Kempsmith universal, new.
No. 2 Kempsmith plain.
No. 3 Kempsmith plain, new.
No. 3 Cincinnati universal.
No. 3½ Fox.
No. 25 Becker plain, power feed.
No. 2 H Brown & Sharpe plain.
Oesterlein 24x7½x18 plain.
Briggs "A" high duty, 24x8" table.
No. 7 Becker, Lincoln type.

GRINDERS

Nos. 1 & 78 W. & M. surface.
6"x15" Fitchburg plain.
10"x36' Landis plain cylindrical.
12"x36" Cincinnati universal.
16"x42" Landis universal.
36" and 66" Yates plate.
No. 70 Heald internal.
No. 60 Heald cylinder.
Schmitt cylinder grinder.
No. 3 Ohio universal, tool and cut.
No. 4 Gardner 20" double disc.
No. 10 Besly 18" double disc.
No. 20 Bryant, chucking.
Capital internal, new, 2"x2" cap.

MISCELLANEOUS

Band saw, Clark, compound.
Band saws, Napier 4"x4", 10"x10".
Bending rolls, 7' for 3" plate.
Boring mill, Colburn No. 3, tur. hd.
Boring mill, 50" car wheel.
Brake, 10', 18-gauge metal.
Broaching mchs., 1 and 3 LaPointe.
Positive pres. blower, No. 5 Conner.
Compressors, 6x8, 8x8 and 9x8.
Drawing tables, adjust., 42"x6' top.
Gear cutter, No. 3—26 B. & S.
Gear miller, Bilton No 1.
Hammer, No. 1 Pettingell.
Hammer, 150 lb. Standard drop.
Pipe machines, 2", 4" & 6".
Pumps, Gould triplex, 6½x8".
Punch & shear, ½x10" throat.
Punch & sh'r, No. 4 H. & J., 52" thrt.
Riveting hammers, High Speed Nos. 2, 3, 4 & 5-A.
Scale, 1500 lb. Toledo, dial type.
Sceleroscope, Shore type C.
Shear, 60" Peck, Stow & W., 18 ga.
Shear, No. 362 Robinson.
Shear, No. 20 Quickwork, 30" throat.
Shear, circular, Pettingell, 60" thrt.
Tapping machine, Acme 6-spindle.
Threading mche., W. & P. 2-spindle.

THE OSBORNE & SEXTON MACHINERY COMPANY
COLUMBUS Dept. H. OHIO

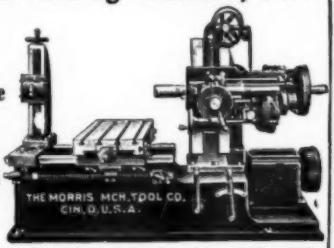
USED LATHE BARGAINS

12/22"x5½" Barnes Gap.
12"x 6' Monarch Q. C. G., D. B. G.
14"x 8' Prentice Q. C. G., Geared Head.
16"x 8' Union, Standard, S. B. G.
16"x 8' Porter Standard, S. B. G.
17"x 8' Sidney Q. C. G., D. B. G.
18"x 8' Rockford Q. C. G., D. B. G.
18"x 8' Greaves Klusman, Q. C. G., D. B. G.
18"x12' Hamilton, Q. C. G., D. B. G.
18"x 8' Hamilton, Standard, S. B. G.
18"x 8' Bradford, Standard, S. B. G.
18"x 8' Monarch, Standard, S. B. G.
18"x 8' F. E. Reed, Standard, S. B. G.
18"x10' F. E. Reed, Standard, S. B. G., taper attach.
18"x 8' Whitcomb-Blaisdell, Standard, S. B. G.
20"x 8' Bradford, Standard, S. B. G.
20"x10' F. E. Reed, Standard, S. B. G.
20"x14' Flather, Standard, S. B. G.
20"x10' Monarch, Q. C. G., D. B. G.
24"x12' Bradford, Q. C. G., D. B. G.
25"x12' LeBlond, Q. C. G., D. B. G.
30"x14' LeBlond, Q. C. G., D. B. G.
32"x14' Wickes, Q. C. G., D. B. G.
32"x18' Bradford, Standard, S. B. G.

Stocker-Rumely-Wachs Co.
117 N. Jefferson St., Chicago, Ill.

Morris Horizontal
Drilling and Boring Machine, New

With
Factory Guarantee
$1,350
F. O. B. Cincinnati



We also have a number of used Lathes from 14" to 24" that are in good condition. Prices quoted on request.

The Morris Machine Tool Co.
CINCINNATI, OHIO

Must Vacate Our Warehouse — Attractive Prices To Move Stock

BORING MILLS:	30" Bullard Vertical	$200.
	36"/48" Bridgeport Extension, 1 swivel head	300.
	96" Niles, 2 heads.	
DRILLS:	5' Baush Radial, motor drive, with motor	$450.
	12" Allen Ball Bearing Sensitive	150.
	24" Weigel B. G.	350.
LATHES:	14"x6' Lodge & Shipley q. c. g.	$160.
	22"x10' Lodge & Shipley, q. c. g.	500.
	24"x16½' Johnson, solid spindle	275.
	26"x10½' Walcott Hvy. Duty Q.C.G., 3, ea.	650.
	42"x30' Pond, triple geared	900.
	18" Libby Turret, 3⅝" hol. spdl. with motor	800.
	24"x6' Gisholt Turret, 6¼" hol. spdl.	850.
	3"x36" Jones & Lamson Flat Turret	700.
	3"x36" Jones & Lamson Flat Turret	600.
MILLING MCHES.:	No. 5 Brown & Sharpe Plain	$675.
PRESSES:	Double Cam Action, 4" stroke	$100.
	Double Acting Drawing, 3¼" stroke	125.
HAMMERS:	25 lb. Bradley Cushioned Helve	$125.
	40 lb. Bradley Cushioned Helve	150.
	800 lb. Bement Single Frame Steam Forging	475.
	2000 lb. Bement Steam Drop	475.
SHAPERS:	14" Lodge & Davis S. G.	$150.
	20" Cincinnati B. G. Crank	375.
	24" Gould & Eberhardt B. G. Crank	400.
	24" Cincinnati B. G. Crank	600.
	28" Ohio Double Geared	300.
MISCELLANEOUS:	Air Compressor, Chicago 12x14, cap. 275 cu. ft.	$500.
	Crane, Panama Portable, 2½-ton	60.
	Hoist, Euclid 3-ton Electric, with mono-rail.	
	Pipe Folder, 32" hand power for 24 gauge	$ 20.
	Pipe Machine, Eaton-Cole-Burnham 1" to 4"	200.
	Pipe Machine, Eaton-Cole-Burnham 2½ to 8"	350.
	Planer, 36"x36"x10' Wilson, 2 hds.	
	Saw, Gliem Cold, 22" dia., cap. 6" round	100.
	Shear, Waterbury-Farrel Rotary, about 16 gauge	40.

RUSSELL MACHINE COMPANY

1447 Oliver Building, PITTSBURGH, PA.

Special Bargains

Murchey Semi-Automatic Double Head Nipple and Pipe Threading Machines

Two used No. 2 Murchey Semi-Automatic Double Head Nipple and Pipe Threading Machines, capacity ½" to 2", complete with pump, tank, piping, chamfering tools, die head and chasers, and countershaft.

PRICE, each, F. O. B. Rochester... **$500.**

Ogden R. Adams Company, Inc.

ROCHESTER, N. Y.

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EXCLUSIVELY

EMBOSSING PRESSES
1—No. 27 Bliss, 1000 tons.
2—No EG 54 Ferracute, 400 tons

STRAIGHT SIDE PRESSES
2—No 575 Toledo, tie rod.
1—No. 77½ Bliss Tie Rod.
1—No. 65 Cons., tie rod, geared.
1—No. 59 Toledo, dbl. geared.
1—No. 63 V. & O.
2—No. 56 Toledo, grd. s. shear.

TOGGLE PRESSES
3—No. 1½ Bliss, friction clutch.

AUTO. TRANSFER PRESSES
1—No. 202 Bliss, 5 plungers.

BENCH PRESSES
25—No. 1B Baird, new.

DOUBLE CRANK PRESSES
No. 91D Toledo, Geared.
1—No.202A Toledo, overh'g, fly.
1—No. 4¾B Bliss, geared.
1—No.40A Williams & W., new, grd., bed 40x33, wt 30000 lbs.
2—No. SG 52 Ferracute, geared, 40" between uprights.

SOLID BACK PRESSES
1—No. PG6 Ferracute geared.
1—No. 35P Toledo, plain.
1—No. 23 V. & O. combination.

ADJUSTABLE BED PRESSES
1—No.147 Toledo, grd. bed 30x20
7—No. 83 Consolidated.
1—No. 3A Bliss.
1—No. 42 V. & O.

Over 1200 Presses in Stock. ***Write for New Catalogue.***

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Richmond St. and Erie Ave., Philadelphia, Pa.

A Few Of Our Good Tools

21" Smith & Mills Crank Shaper, Excellent...$400.
21" Juengst Shaper, Good Condition..... 250.
16" Hendey Shaper, Good Condition..... 185.
No. 3 B. & S. Latest Type Miller—Perfect.
5' American Radial Drill, Modern—like New.
30"x30"x7' Gray Planer, 2 heads, Excellent.
48"x20' Fifield Lathe, Good Condition.
14"x8' Prentice Lathe, q. c. g., Modern.... 250.
18"x8' Springfield Lathe, Pl. Change, Comp. 185.

These are only a FEW of our good tools at Bargain Prices. Write us for what you need. Tell us about the tools you have for disposal.

"Nearly Half Century's Experience and Reputation IN THE USED MACHINERY MARKET"

Bertolette Machinery Exchange

14th & Provost Sts., JERSEY CITY, N. J.

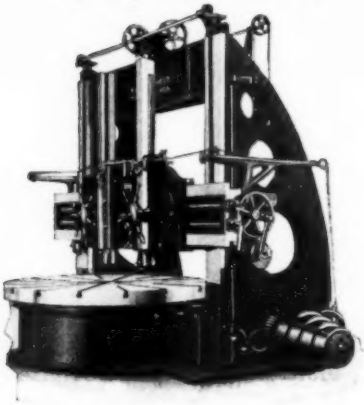
Some things you don't always find:—

Generator, (brand new), 10 k. w., 50 c., 125 v., 80 amp., d. c. Westinghouse Turbine, with auto. governor.
Tumbling Barrels, 27"x36" Foundry, gd. type.
Motor, 10 h. p. Westinghouse, 220 v., 3 ph., 60 cycle, with compensator.
Gasoline Engine, 2 h.p. model, d.c., New Way air cooled.
Cutting-off Machine, 4" Hurlbut-Rogers.
Slotter, Geared, 26" Niles.
Chuck, Magnetic, 16" D & W. Rotary, 230 volts.
Milling Attachment, No 5-H Cincinnati vertical.
Milling Attachment, No. 2 Farwell.
Pipe Bender, ½" to 3" cap. Riverside, hand.

THE E. L. ESSLEY · MACHINERY · CO

551 W. Washington Blvd., Chicago. 78-80 W. Water St., Milwaukee

$4,950.00



Betts 110" Vertical Boring and Turning Mill

The expiration of the lease of one of our warehouses makes it necessary to dispose of the Boring Mill shown above. We have been holding this machine at a price of $8,500.00, and it is really worth that price. However, the necessity of removing it promptly induces us to offer it at the very low price of **$4,950.00 F. O. B. Philadelphia, subject to prior sale.**

Turning capacity	110"
Width between housings	107"
Distance under rail, maximum	69"
Height under tool holders, maximum	58"
Diameter of table	90"
Length of rail	155"
Width of rail face	22½"
Vertical travel of each ram	40"
Weight	40,000 lbs.

Belt driven, with 4-step cone for 5½" belt.

This machine has had but very little actual use, and is in absolutely perfect condition. Besides, we have gone over every part of the machine so that we know it is entirely complete and ready for immediate service.

Here is a bona fide bargain; one that is unprecedented and one that isn't likely to ever be offered again.

Monarch Machinery Company

"Philadelphia's Machinery Merchants"

300 North Third Street, Philadelphia, Penna.

When Westinghouse Buys Thirty-Four "Rarefieds"—

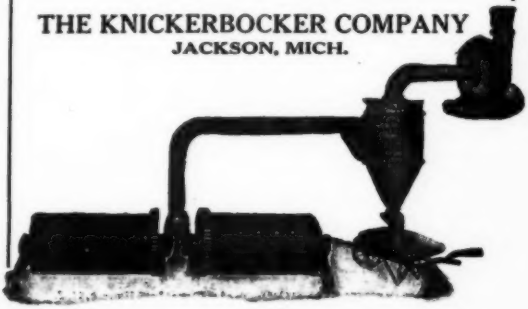
Doesn't it strike you as though the Dust Collector so recommended is decidedly well worth looking into? And Westinghouse is only one of our many satisfied big customers—we can also refer you to Buick Motor, Western Electric, Solvay Process, Willis-Overland, General Electric—and hundreds of others, both large and small.

The "Rarefied" Dust Collector

is operated on the "rarefied" or partial vacuum principle, the air being drawn thru the collector, and the dust is removed before the air reaches the fan. It is thoroly efficient, uses less power, and repair costs are kept down close to zero.

Let us mail you our interesting Booklet

THE KNICKERBOCKER COMPANY
JACKSON, MICH.



Classified Finding Index

Air Compressors, Electric
Petrick Bros., 2226 Belmont Ave., Chicago

Air Guns
Powell Co., Wm., Cincinnati

Angle Plates
Passman Bros., 707 W. Washington Blvd., Chicago

Angle and Surface Plates, Universal.
Advanced Engineering Co., San Francisco

Arbors, Solid
Nicholson & Co., W. H., Wilkes-Barre, Pa.

Auto-Gages For Dies
Danly Machine Specialties, Inc., 4913 Lincoln Ave., Chicago

Automatics
Cleveland Automatic Machine Co., Cleveland, O.
National Acme Company, Cleveland, O.
New Britain Machine Co., New Britain, Conn.

Balancing Ways
Anderson Bros. Mfg. Co., Rockford, Ill.
Bowsher Co., N. F., South Bend, Ind.

Balls, Bearing and Burnishing
Abbott Ball Co., Hartford, Conn.

Band Saw Machines, for Metal
Armstrong-Blum Mfg. Co., 341 N. Francisco Av., Chicago
Porter-Cable Machine Co., Syracuse, N. Y.

Barrels, Tumbling
Abbott Ball Co., Hartford, Conn.
Scully-Jones & Co., 2012 W. 13th, Chicago

Belt Shifters
Artisan Mfg. Co., Cincinnati, O.

Bench Legs, Steel
New Britain Mchs. Co., New Britain, Conn.

Bending Machines, Hand and Power
Armstrong-Blum Mfg. Co., 341 N. Francisco Ave., Chicago
Hendley & Whittemore Co., Beloit, Wis.
Lewthwaite Mchs. Co., T. H. 417E. 31st., N.Y.
Lourie Hydraulic Co., Springfield, Ill.
Pedrick Tool & Machine Co., Philadelphia

Bending Rolls
Hendley & Whittemore Co., Beloit, Wis.

Belt and Nut Machinery
Economy Engineering Co., Willoughby, O.
Foote-Burt Co., Cleveland, O.

Boring Bars
Pedrick Tool & Machine Co., Philadelphia

Boring Bars, Cylinder
Pedrick Tool & Machine Co., Philadelphia

Boring, Drilling & Milling Machines
Landis Tool Co., Waynesboro, Pa.

Boring Machines, Horizontal
Avey Drilling Machine Co., Cincinnati
Pedrick Tool & Machine Co., Philadelphia

Boring Tools
Maxwell Products Co., Cleveland, Ohio.
Ribbe & Grey, La Porte, Ind.

Boring and Turning Machines, Vertical
Cincinnati Planer Co., Cincinnati, Ohio

Bulldozers, Hydraulic
Lourie Hydraulic Co., Springfield, Ill.

Burnishing Equipment, Ball
Abbott Ball Co., Elmwood, Conn.

Cabinets, Steel
N. Y. Machinery Co., 200 Fifth Ave., N. Y.

Calipers, Vernier
Scherr Co., George, 142 Liberty St., N. Y.

Case-Hardening Compound
Kasenit Company, 2 & 4 Stone St., New York

Chucking Machines
National Acme Company, Cleveland, O.
New Britain Mchs. Co., New Britain, Conn.
Springfield Machine Tool Co., Springfield, O.

Chucks, Collet
Ames Co., B. C., Waltham, Mass.
Hardinge Brothers, Inc., 1770 Bertsen Ave., Chicago

Chucks, Drill
Barber-Colman Co., Rockford, Ill.
Eastern Tube & Tool Co., Inc., 580 Johnson Ave., Brooklyn, N. Y.
Jacobs Mfg. Co., Hartford, Conn.
Scully-Jones & Co., 2012 W. 13th, Chicago
Titan Tool Co., Erie, Pa
Wergandt Co., T. C., 248 "C" W. Broadway, New York

Chucks, Drill and Tap
Barber-Colman Co., Rockford, Ill.
Scully-Jones & Co., 2012 W. 13th, Chicago

Chucks, Keyway Cutting
Scully-Jones & Co., Ry. Exch. Bldg., Chicago

Chucks, Magnetic
J. & H. Electric Co., Providence, R. I.

Clamps, Die
Danly Machine Specialties, Inc., 4913 Lincoln Ave., Chicago

Clutches, Friction
Conway Clutch Co., Cincinnati, O.
Edgemont Machine Co., Dayton, O.

Cold Saws
Burke Machine Tool Co., Conneaut, Ohio

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Hardinge Brothers, Inc., 1770 Bertsen Ave., Chicago

Contract Work Wanted
Burke Machine Tool Co., Conneaut, O.

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Glenzer Co., J. C., Detroit, Mich.

Couplings, Friction Clutch
Conway Clutch Co., Cincinnati, O.

Cranes, Portable
Canedy-Otto Mfg. Co., Chicago Heights, Ill.
Canton Foundry & Mchs. Co., Canton, Ohio

Crank Pin Turning Machine
Pedrick Tool & Machine Co., Philadelphia

Cutters, Gear Shaper
National Tool Co., Cleveland, O.

Cutters, Keyseating
Davis Keyseater Co., Rochester, N. Y.
Scully-Jones & Co., 2012 W. 13th, Chicago

Cutters, Milling
Barber-Colman Co., Rockford, Ill.
Genesee Mfg. Co., Rochester, N. Y.
National Tool Co., Cleveland, O.

Cylinder Boring Machines, Portable
Pedrick Tool & Machine Co., Philadelphia

Demagnetizers
J. & H. Electric Co., Providence, R. I.

Dial Indicators
Federal Products Corp'n, Providence, R. I

Die Heads, Threading, Self Opening
National Acme Company, Cleveland, O.

Dies
Sloan & Chace, Inc., Newark, N. J.

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Die Sets
Danly Machine Specialties, Inc., 4913 Lincoln Ave., Chicago

Discs, Machine Steel
Passman Bros., 707 W. Washington Blvd., Chicago

Drill Racks
Peerless Machine Co., Racine, Wis.

Drill Tables and Vise
Modern Machine Tool Co., Jackson, Mich.

Drilling Machine Heads, Multiple
Gaterman Mfg. Co., W., Manitowoc, Wis.
United States Drill Head Co., Cincinnati

Drilling Machines, Bench
Ames Co., B. C., Waltham, Mass.
Avey Drilling Machine Co., Cincinnati
Burke Machine Tool Co., Conneaut, Ohio
Canedy-Otto Mfg. Co., Chicago Heights, Ill.
Gaterman Mfg. Co., W., Manitowoc, Wis.
Sigourney Tool Co., Hartford, Conn.
Sloan & Chace, Inc., Newark, N. J.
Winterhoff Tool & Machine Co., Elkhart, Ind.
Taylor & Fenn Co., Hartford, Conn.

Drilling Machines, Flexible Shaft
Biax Flexible Shaft Co., 136 Liberty Street, New York

Drilling Machines, Horizontal
Gaterman Mfg. Co., W., Manitowoc, Wis.

Drilling Machines, Multiple Spindle
Avey Drilling Machine Co., Cincinnati
Foote-Burt Co., Cleveland, O.
Fosdick Machine Tool Co., Cincinnati, O.
Gaterman Mfg. Co., W., Manitowoc, Wis.
Sigourney Tool Co., Hartford, Conn.
Taylor & Fenn Co., Hartford, Conn.

Drilling Machines, Portable Electric
Biax Flexible Shaft Co., 136 Liberty St., New York
Cincinnati Electrical Tool Co., Cincinnati, O.
Independent Pneumatic Tool Co., 600 W. Jackson Blvd., Chicago
Stow Flexible Shaft Co., Philadelphia, Pa.
Strand Co., N. A., 5001 N. Lincoln St., Chicago
Winterhoff Tool & Machine Co., Elkhart, Ind.

Drilling Machines, Post
Canedy-Otto Mfg. Co., Chicago Heights, Ill.

Drilling Machines, Radial
Canedy-Otto Mfg. Co., Chicago Heights, Ill.
Fosdick Machine Tool Co., Cincinnati, O.
Taylor & Fenn Co., Hartford, Conn.

Drilling Machines, Sensitive
Avey Drilling Machine Co., Cincinnati
Burke Machine Tool Co., Conneaut, Ohio
Canedy-Otto Mfg. Co., Chicago Heights, Ill.
Foote-Burt Co., Cleveland, O.
Fosdick Machine Tool Co., Cincinnati, O.
Gaterman Mfg. Co., W., Manitowoc, Wis.
Leland-Gifford Co., Worcester, Mass.
Sigourney Tool Co., Hartford, Conn.
Taylor & Fenn Co., Hartford, Conn.
U. S. Machine Tool Co., Cincinnati, O.

Drilling Machines, Vertical
Avey Drilling Machine Co., Cincinnati
Canedy-Otto Mfg. Co., Chicago Heights, Ill.
Foote-Burt Co., Cleveland, O.
Fosdick Machine Tool Co., Cincinnati, O.
Gaterman Mfg. Co., W., Manitowoc, Wis.
Leland-Gifford Co., Worcester, Mass.
Sigourney Tool Co., Hartford, Conn.
Taylor & Fenn Co., Hartford, Conn.

Dust Handling Equipment
Knickerbocker Co., Jackson, Mich.

Emery Wheel Dressers and Cutters
Ross Manufacturing Co., Cleveland, O.
Taylor & Fenn Co., Hartford, Conn.
Western Tool & Mfg. Co., Springfield, O.

Etchers, Electric
Martindale Electric Co., Cleveland, O.

Feeders, Oil and Soda Water
New Britain Machine Co., New Britain, Conn

Filing Machines, Die
Ames Co., B. C., Waltham, Mass.

Filing Room Equipment
Wardwell Mfg. Co., Cleveland, O.

Flexible Shafts
Biax Flexible Shaft Co., 136 Liberty Street, New York
Strand Co., N.A., 5001 N. Lincoln St., Chicago

Forges
Canedy-Otto Mfg. Co., Chicago Heights, Ill

Forgings, Hollow Bored
American Hollow Boring Co., Erie, Pa

Furniture, Machine Shop
New Britain Machine Co., New Britain, Conn
Western Tool & Mfg. Co., Springfield, O.

Gauges, Dial
Ames Co., B. C., Waltham, Mass.
Federal Products Corp'n, Providence, R. I.

Gauges, Piston and Piston Ring
Federal Products Corp'n, Providence, R. I.

Gauges, Thread
Federal Products Corp'n, Providence, R. I

Gear Cutting Machines
Barber-Colman Co., Rockford, Ill
Sloan & Chace, Inc., Newark, N. J.

Gears
Boston Gear Works Sales Company, Norfolk Downs, Mass.
Massachusetts Gear & T. Co., Woburn, Mass.

Grinding Machines, Belt
Gallmeyer & Livingston Co., Grand Rapids, Mich.
Peerless Surfacing Machine Co., Troy, N. Y.

Grinding Machines, Bench
Bodine Electric Co., 2256 W. Ohio St., Chgo.
Gallmeyer & Livingston Co., Grand Rapids, Mich.

Grinding Machines, Cutter, Reamer and Tool
Gallmeyer & Livingston Co., Grand Rapids, Mich.
Jarecki Mchc. & T. Co., Grand Rapids, Mich.
Landis Tool Co., Waynesboro, Pa.
LeBlond Mch. Tool Co., R. K., Cincinnati, O.
Thompson Grinder Co., Springfield, Ohio

Grinding Machines, Cylindrical
Jarecki Mchc. & T. Co., Grand Rapids, Mich.
Landis Tool Co., Waynesboro, Pa.
Thompson Grinder Co., Springfield, Ohio

Grinding Machines, Die
Gallmeyer & Livingston Co., Grand Rapids, Mich.
Jarecki Mchc. & T. Co., Grand Rapids, Mich.
Thompson Grinder Co., Springfield, Ohio

Grinding Machines, Disc
Gallmeyer & Livingston Co., Grand Rapids, Mich.
Porter Cable Machine Co., Syracuse, N. Y.

Grinding Machines, Drill
Gallmeyer & Livingston Co., Grand Rapids, Mich.
La Salle Tool Co., La Salle, Ill.

Grinding Machines, Face
Taylor & Fenn Co., Hartford, Conn.

Grinding Machines, Flexible Shaft
Biax Flexible Shaft Co., 136 Liberty Street, New York

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Grinding Machines, Internal
Landis Tool Co., Waynesboro, Pa.
Taylor & Fenn Co., Hartford, Conn.
Thompson Grinder Co., Springfield, Ohio

Grinding Machines, Portable Electric
Blax Flexible Shaft Co., 136 Liberty St., New York

Bodine Electric Co., 2256 W. Ohio St., Chgo.
Cincinnati Electrical Tool Co., Cincinnati, O.
Independent Pneumatic Tool Co., 600 W. Jackson Blvd., Chicago
Porter-Cable Machine Co., Syracuse, N. Y.
Stow Flexible Shaft Co., Philadelphia, Pa.
Strand Co., N.A., 5001 N. Lincoln St., Chgo

Grinding Machines, Snagging
Gallmeyer & Livingston Co., Grand Rapids, Mich.
Jarecki Mchs. & T. Co., Grand Rapids, Mich.

Grinding Machines, Surface
Gallmeyer & Livingston Co., Grand Rapids, Mich.
La Salle Tool Co., La Salle, Ill.
Thompson Grinder Co., Springfield, Ohio

Grinding Machines, Tap
Gallmeyer & Livingston Co., Grand Rapids, Mich.

Grinding Machines, Tool
Taylor & Fenn Co., Hartford, Conn.

Grinding Machines, Universal
Gallmeyer & Livingston Co., Grand Rapids, Mich.
Landis Tool Co., Waynesboro, Pa.
Thompson Grinder Co., Springfield, Ohio

Hack Saw Blades
Peerless Machine Co., Racine, Wis.

Hack Saw Machines
Armstrong-Blum Mfg. Co., 341 N. Francisco Av., Chicago
Peerless Machine Co., Racine, Wis.
Racine Tool & Machine Co., Racine, Wis.

Hammers, Air
Independent Pneumatic Tool Co., 600 W. Jackson Blvd., Chicago

Hammers, Riveting
Independent Pneumatic Tool Co., 600 W. Jackson Blvd., Chicago

High Speed Steel, Drills, Cutters
Bernstein, Geo. M., 549 W. Washington Blvd., Chicago

Hubs
Barber-Colman Co., Rockford, Ill.
National Tool Co., Cleveland, O.

Hoists
Ford Chain Block Co., Philadelphia, Pa.

Hoists, Portable
Canton Foundry & Machine Co., Canton, Ohio

Hydraulic Machinery
Lourie Hydraulic Co., Springfield, Ill.

Jigs and Fixtures
Sloan & Chace, Inc., Newark, N. J.

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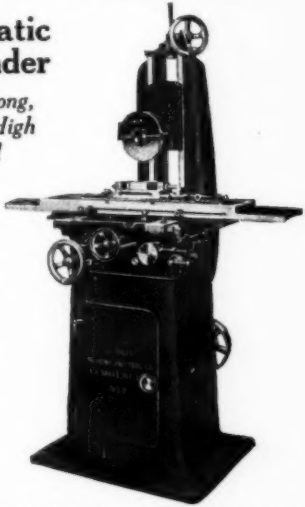

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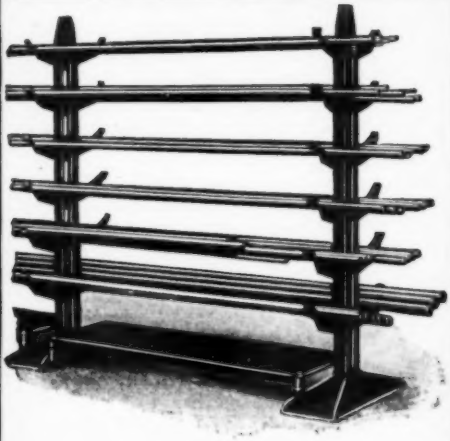

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